



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**..... : CN24QVA3 003  
**Date of issue** ..... : 2025-06-13  
**Total number of pages** ..... : 38 (excluding attachments, refer to page 6)

**Name of Testing Laboratory  
preparing the Report** ..... : TÜV Rheinland (Shanghai) Co., Ltd.

**Applicant's name** ..... : Hangzhou Hikvision Digital Technology Co., Ltd.  
**Address**..... : No. 555 Qianmo Road, Binjiang District, Hangzhou, 310052 Zhejiang, P.R.  
China

#### Test specification:

**Standard** ..... : IEC 62368-1:2014  
**Test procedure**..... : CB Scheme  
**Non-standard test method** ..... : N/A

**TRF template used**..... : IECEE OD-2020-F1:2021, Ed.1.4  
**Test Report Form No.** ..... : IEC62368\_1D  
**Test Report Form(s) Originator**.. : UL(US)  
**Master TRF** ..... : Dated 2022-04-14

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**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.

<b>Test Item description .....</b>	Network Video Recorder
<b>Trade Mark(s) .....</b>	HIKVISION
<b>Manufacturer .....</b>	Same as applicant
<b>Model/Type reference .....</b>	DS-7616NI-Q2/16P, DS-7616NI-Q2/16PUHK, DS-7616NI-Q2/16PCKV, DS-7616NI-Q2/16PUVS, DS-7616NI-Q2/16PKVO, DS-7616NI-Q2/16PHUN, NVR-216MH-C/16P, NVR-216MH-C/16PUHK, NVR-216MH-C/16PCKV, NVR-216MH-C/16PUVS, NVR-216MH-C/16PKVO, NVR-216MH-C/16PHUN, HWN-4216MH-16P, HWN-4216MH-16PUHK, HWN-4216MH-16PCKV, HWN-4216MH-16PUVS, HWN-4216MH-16PKVO, HWN-4216MH-16PHUN, ERI-K216-P16, DS-7616NI-K2/16P, DS-7616NI-K2/16PUHK, DS-7616NI-K2/16PCKV, DS-7616NI-K2/16PUVS, DS-7616NI-K2/16PKVO, DS-7616NI-K2/16PHUN, DS-7632NI-K2/16P, DS-7632NI-K2/16PUHK, DS-7632NI-K2/16PCKV, DS-7632NI-K2/16PUVS, DS-7632NI-K2/16PKVO, DS-7632NI-K2/16PHUN, DS-7616NI-M2/16P, DS-7616NI-M2/16PUHK, DS-7616NI-M2/16PCKV, DS-7616NI-M2/16PUVS, DS-7616NI-M2/16PKVO, DS-7616NI-M2/16PHUN, DS-7616NI-M2/16P/EDU, DS-7616NI-M2/16P/RTL, DS-7616NI-M2/16P/NRG, DS-7616NI-M2/16P/LGX, DS-7616NI-M2/16P/MFG, DS-7616NI-M2/16P/RMS, DS-7616NXI-K2/16P, DS-7616NXI-K2/16PUHK, DS-7616NXI-K2/16PCKV, DS-7616NXI-K2/16PUVS, DS-7616NXI-K2/16PKVO, DS-7616NXI-K2/16PHUN, DS-7632NXI-K2/16P, DS-7632NXI-K2/16PUHK, DS-7632NXI-K2/16PCKV, DS-7632NXI-K2/16PUVS, DS-7632NXI-K2/16PKVO, DS-7632NXI-K2/16PHUN, DS-7816NXI-K2/16P, DS-7816NXI-K2/16PUHK, DS-7816NXI-K2/16PCKV, DS-7816NXI-K2/16PUVS, DS-7816NXI-K2/16PKVO, DS-7816NXI-K2/16PHUN, DS-7832NXI-K2/16P, DS-7832NXI-K2/16PUHK, DS-7832NXI-K2/16PCKV, DS-7832NXI-K2/16PUVS, DS-7832NXI-K2/16PKVO, DS-7832NXI-K2/16PHUN, DS-7616NI-K2/16P/4G, DS-7616NI-K2/16P/4GUHK, DS-7616NI-K2/16P/4GCKV, DS-7616NI-K2/16P/4GUVS, DS-7616NI-K2/16P/4GHUN, DS-7616NI-K2/16P/4GKVO, iDS-7616NXI-M2/16P/X, iDS-7616NXI-M2/16P/XUHK, iDS-7616NXI-M2/16P/XCKV, iDS-7616NXI-M2/16P/XUVS, iDS-7616NXI-M2/16P/XKVO, iDS-7616NXI-M2/16P/XHUN, iDS-7616NXI-M2/16P/X/EDU, iDS-7616NXI-M2/16P/X/RTL, iDS-7616NXI-M2/16P/X/NRG, iDS-7616NXI-M2/16P/X/LGX, iDS-7616NXI-M2/16P/X/MFG, iDS-7616NXI-M2/16P/X/RMS, DS-7616NI-I2/16P, DS-7616NI-I2/16P(D), DS-7616NI-I2/16PUHK, DS-7616NI-I2/16PCKV, DS-7616NI-I2/16PUVS,

	<p>DS-7616NI-I2/16PKVO, DS-7616NI-I2/16PHUN,  DS-7632N-I2/16P, DS-7632N-I2/16PUHK,  DS-7632N-I2/16PCKV, DS-7632N-I2/16PUVS,  DS-7632N-I2/16PKVO, DS-7632N-I2/16PHUN,  HWN-5216MH-16P, HWN-5232MH-16P  DS-7632NI-I2/16PUHK, DS-7632NI-I2/16PCKV,  DS-7632NI-I2/16PUVS, DS-7632NI-I2/16PKVO,  DS-7632NI-I2/16PHUN, DS-7616NXI-I2/16P/S,  DS-7616NXI-I2/16P/S(E), DS-7616NXI-I2/16P/SUHK,  DS-7616NXI-I2/16P/SCKV, DS-7616NXI-I2/16P/SUVS,  DS-7616NXI-I2/16P/SHUN, DS-7616NXI-I2/16P/SKVO,  DS-7616NXI-I2/16P/S/EDU, DS-7616NXI-I2/16P/S/RTL,  DS-7616NXI-I2/16P/S/NRG, DS-7616NXI-I2/16P/S/LGX,  DS-7616NXI-I2/16P/S/MFG, DS-7616NXI-I2/16P/S/RMS,  DS-7632NXI-I2/16P/S, DS-7632NXI-I2/16P/SUHK,  DS-7632NXI-I2/16P/SCKV, DS-7632NXI-I2/16P/SUVS,  DS-7632NXI-I2/16P/SHUN, DS-7632NXI-I2/16P/SKVO,  DS-7632NXI-I2/16P/S/EDU, DS-7632NXI-I2/16P/S/RTL,  DS-7632NXI-I2/16P/S/NRG, DS-7632NXI-I2/16P/S/LGX,  DS-7632NXI-I2/16P/S/MFG, DS-7632NXI-I2/16P/S/RMS,  DS-7616NXI-M2/16P/VPro, DS-7616NXI-M2/16P/VProUHK,  DS-7616NXI-M2/16P/VProCKV, DS-7616NXI-M2/16P/VProUVS,  DS-7616NXI-M2/16P/VProKVO, DS-7616NXI-M2/16P/VProHUN,  DS-7616NXI-M2/16P/VPro/EDU, DS-7616NXI-M2/16P/VPro/RTL,  DS-7616NXI-M2/16P/VPro/NRG, DS-7616NXI-M2/16P/VPro/LGX,  DS-7616NXI-M2/16P/VPro/MFG, DS-7616NXI-M2/16P/VPro/RMS,  DS-7616NXI-K2/16P(D), NVR-216MH-K/16P,  DS-7632NXI-K2/16P(D), NVR-232MH-K/16P,  DS-7916NXI-K2/16P, <b>DS-7616NXI-I2/16P/VPro,</b>  <b>DS-7616NXI-I2/16P/VPro/EDU, DS-7616NXI-I2/16P/VPro/LGX,</b>  <b>DS-7616NXI-I2/16P/VPro/MFG, DS-7616NXI-I2/16P/VPro/NRG,</b>  <b>DS-7616NXI-I2/16P/VPro/RMS, DS-7616NXI-I2/16P/VPro/RTL,</b>  <b>DS-7616NXI-I2/16P/VProCKV, DS-7616NXI-I2/16P/VProHUN,</b>  <b>DS-7616NXI-I2/16P/VProKVO, DS-7616NXI-I2/16P/VProUHK,</b>  <b>DS-7616NXI-I2/16P/VProUVS, DS-7632NXI-I2/16P/VPro,</b>  <b>DS-7632NXI-I2/16P/VPro/EDU, DS-7632NXI-I2/16P/VPro/LGX,</b>  <b>DS-7632NXI-I2/16P/VPro/MFG, DS-7632NXI-I2/16P/VPro/NRG,</b>  <b>DS-7632NXI-I2/16P/VPro/RMS, DS-7632NXI-I2/16P/VPro/RTL,</b>  <b>DS-7632NXI-I2/16P/VProCKV, DS-7632NXI-I2/16P/VProHUN,</b>  <b>DS-7632NXI-I2/16P/VProKVO, DS-7632NXI-I2/16P/VProUHK,</b>  <b>DS-7632NXI-I2/16P/VProUVS, NVR-216MH-K/16P/EDU,</b>  <b>NVR-216MH-K/16P/LGX, NVR-216MH-K/16P/MFG,</b>  <b>NVR-216MH-K/16P/NRG, NVR-216MH-K/16P/RMS,</b>  <b>NVR-216MH-K/16P/RTL, NVR-216MH-K/16PCKV,</b>  <b>NVR-216MH-K/16PHUN, NVR-216MH-K/16PKVO,</b>  <b>NVR-216MH-K/16PUHK, NVR-216MH-K/16PUVS,</b>  <b>NVR-232MH-K/16P/EDU, NVR-232MH-K/16P/LGX,</b>  <b>NVR-232MH-K/16P/MFG, NVR-232MH-K/16P/NRG,</b></p>
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	<b>NVR-232MH-K/16P/RMS, NVR-232MH-K/16P/RTL,</b> <b>NVR-232MH-K/16PCKV, NVR-232MH-K/16PHUN,</b> <b>NVR-232MH-K/16PKVO, NVR-232MH-K/16PUHK,</b> <b>NVR-232MH-K/16PUVS, DS-XXXXXXXXXX,</b> <b>NVR-XXXXXXXXXX ("X" = "A-Z", "a-z", "0-9", "-", "/" or blank)</b>
<b>Ratings .....</b>	Input: 100-240V~, 50/60Hz, 3.2A Max Output: 44-57V--- 0.6A Max. (Each PoE)



<b>Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):</b>		
<input type="checkbox"/>	<b>CB Testing Laboratory:</b>	TÜV Rheinland (Shanghai) Co., Ltd.
<b>Testing location/ address..... :</b>		No.177, 178, Lane 777 West Guangzhong Road, Jing'an District, Shanghai, China c/o TÜV Rheinland Suzhou Co., Ltd. Pingqian (Taicang) Modern Industrial Park, No.525, Yuewang Lingang South Road, Shaxi Town, Taicang City, Jiangsu Province, China
<b>Tested by (name, function, signature)..... :</b>		
<b>Approved by (name, function, signature)..... :</b>		
<input type="checkbox"/>	<b>Testing procedure: CTF Stage 1:</b>	N/A
<b>Testing location/ address..... :</b>		
<b>Tested by (name, function, signature)..... :</b>		
<b>Approved by (name, function, signature)..... :</b>		
<input checked="" type="checkbox"/>	<b>Testing procedure: CTF Stage 2:</b>	Hangzhou Hikvision Digital Technology Co., Ltd. Test Center
<b>Testing location/ address..... :</b>		No. 518 Wulianwang Street, Binjiang District Hangzhou 310052 Zhejiang China
<b>Tested by (name, function, signature)..... :</b>		Meide Wang / Test engineer <i>Meide Wang</i>
<b>Witnessed by (name, function, signature) .....</b>		Chong Tan /Sky Zhu Project engineer <i>Chong Tan sky zhu</i>
<b>Approved by (name, function, signature)..... :</b>		James Zhang / Technical Expert <i>James Zhang</i>
<input type="checkbox"/>	<b>Testing procedure: CTF Stage 3 :</b>	N/A
<input type="checkbox"/>	<b>Testing procedure: CTF Stage 4:</b>	N/A
<b>Testing location/ address..... :</b>		
<b>Tested by (name, function, signature)..... :</b>		
<b>Witnessed by (name, function, signature) .....</b>		
<b>Approved by (name, function, signature)..... :</b>		
<b>Supervised by (name, function, signature) .....</b>		

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

Attachment – Photo Documentation (13 pages)

Note: Total number of pages in each attachment is indicated in individual attachment.

**Summary of testing:****Tests performed (name of test and test clause):**

- This report is based on original CB reports CN24QVA3 001 ~ 002 with certificate ref. no. JPTUV-168456-M1. Add difference test on model DS-7632NXI-I2/16P/VPro. See measurement section for details.
- The test samples are pre-production samples without serial number.
- The manufacturer specified maximum operating temperature is 55°C.

5.6.6.2	Resistance of protective conductors and terminations
B.2.5	INPUT TEST
5.4.1.4, 6.3.2, 9.0, B.2.6	NORMAL OPERATING CONDITIONS TEMPERATURE MEASUREMENT
B.3	Simulated abnormal operating conditions
B.4	Simulated single fault conditions
M.3	PROTECTION CIRCUITS FOR BATTERIES
Q.1	Limited power sources

**Testing location:**

Hangzhou Hikvision Digital Technology Co., Ltd. Test Center  
No.518 Wulianwang Street, Binjiang District Hangzhou  
310052 Zhejiang China

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

The corresponding national differences refer to previous reports CN24QVA3 001 ~ 002.

**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 IECCE.

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

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

**Copy of marking plate:**

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

&lt;Representative&gt;

IDS-7616NXI-M2/16P/X  
Q12345678 21605528

SN: Q12345678

**HIKVISION**  
**Network Video Recorder**  
Model: IDS-7616NXI-M2/16P/X  
SN: C12345678

Quantity: 1  
Date: 08/2022  
2008021825/30

**HDMI™**

CAN ICES-3(A)/NMB-3(A)  
This device complies with Part 15 of the FCC Rules.  
Operation is subject to the following two conditions:  
(1) this device may not cause harmful interference, and  
(2) this device must accept any interference received,  
including interference that may cause undesired operation.

Manufacturer: Hangzhou Hikvision Digital Technology Co., Ltd.  
Address: No.555 Qianmo Road, Binjiang District, Hangzhou 310052, China

UK CE  
Scan to Download App  
Hik-Connect  
Made in China

Lot No.: 21605528  
Material Code: 303617217

6 954273 650940

**HIKVISION**  
**Network Video Recorder**  
Model: IDS-7616NXI-M2/16P/X  
SN: Q12345678

I/P: 100-240V~, 50/60Hz, 3.2A MAX  
O/P: Each PoE44-57V=0.6A MAX  
CAN ICES-3(A)/NMB-3(A) IC:xxxxxx-xxxxxxxxxx  
Made in China FCC ID:2ADTD-xxxxxxxxxx

This device complies with Part 15 of the FCC Rules.  
Operation is subject to the following two conditions:  
(1) this device may not cause harmful interference, and  
(2) this device must accept any interference received,  
including interference that may cause undesired operation.  
Manufacturer: Hangzhou Hikvision Digital Technology Co., Ltd.  
Address: No.555 Qianmo Road, Binjiang District, Hangzhou 310052, China

**Note:**

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

TEST ITEM PARTICULARS:	
Classification of use by .....	<input checked="" type="checkbox"/> Ordinary person <input type="checkbox"/> Instructed person <input type="checkbox"/> Skilled person <input type="checkbox"/> Children likely to be present
Supply Connection.....	<input checked="" type="checkbox"/> AC Mains <input type="checkbox"/> DC Mains <input type="checkbox"/> External Circuit - not Mains connected - <input type="checkbox"/> ES1 <input type="checkbox"/> ES2 <input type="checkbox"/> ES3
Supply % Tolerance .....	<input checked="" type="checkbox"/> +10%/-10% <input type="checkbox"/> +20%/-15% <input type="checkbox"/> +____%/ -____% <input type="checkbox"/> None
Supply Connection – Type .....	<input checked="" type="checkbox"/> pluggable equipment type A - <input type="checkbox"/> non-detachable supply cord <input checked="" type="checkbox"/> appliance coupler <input type="checkbox"/> direct plug-in <input type="checkbox"/> mating connector <input type="checkbox"/> pluggable equipment type B - <input type="checkbox"/> non-detachable supply cord <input type="checkbox"/> appliance coupler <input type="checkbox"/> permanent connection <input type="checkbox"/> mating connector <input type="checkbox"/> other:
Considered current rating of protective device as part of building or equipment installation.....	16A (20A for US/CA); Installation location: <input checked="" type="checkbox"/> building; <input type="checkbox"/> equipment
Equipment mobility .....	<input checked="" type="checkbox"/> movable <input type="checkbox"/> hand-held <input type="checkbox"/> transportable <input type="checkbox"/> stationary <input type="checkbox"/> for building-in <input type="checkbox"/> direct plug-in <input type="checkbox"/> rack-mounting <input type="checkbox"/> wall-mounted
Over voltage category (OVC) .....	<input type="checkbox"/> OVC I <input checked="" type="checkbox"/> OVC II <input type="checkbox"/> OVC III <input type="checkbox"/> OVC IV <input type="checkbox"/> other
Class of equipment .....	<input checked="" type="checkbox"/> Class I <input type="checkbox"/> Class II <input type="checkbox"/> Class III <input type="checkbox"/> Class II with functional earthing <input type="checkbox"/> Not classified
Access location .....	<input type="checkbox"/> restricted access area <input checked="" type="checkbox"/> N/A
Pollution degree (PD) .....	<input type="checkbox"/> PD 1 <input checked="" type="checkbox"/> PD 2 <input type="checkbox"/> PD 3
Manufacturer's specified maxium operating ambient .....	55 °C
IP protection class .....	<input checked="" type="checkbox"/> IPX0 <input type="checkbox"/> IP____
Power Systems .....	<input type="checkbox"/> TN <input type="checkbox"/> TT <input type="checkbox"/> IT - ____ V L-L; <input type="checkbox"/> dc mains <input checked="" type="checkbox"/> N/A
Altitude during operation (m) .....	<input type="checkbox"/> 2000 m or less <input checked="" type="checkbox"/> 5000 m
Altitude of test laboratory (m) .....	<input checked="" type="checkbox"/> 2000 m or less <input type="checkbox"/> ____ m
Mass of equipment (kg) .....	<input checked="" type="checkbox"/> Approx. 2.78 Kg

<b>Possible test case verdicts:</b>	
- test case does not apply to the test object .....	N/A
- test object does meet the requirement .....	P (Pass)
- test object does not meet the requirement .....	F (Fail)
<b>Testing .....</b>	
<b>Date of receipt of test item .....</b>	2025-04-09
<b>Date (s) of performance of tests .....</b>	2025-04-09 to 2025-05-29
<b>General remarks:</b>	
"(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report.	
Throughout this report a <input type="checkbox"/> comma / <input checked="" type="checkbox"/> point is used as the decimal separator.	
<b>Manufacturer's Declaration per sub-clause 4.2.5 of IEC62368-1:</b>	
The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided.....	<input checked="" type="checkbox"/> <b>Yes</b> <input type="checkbox"/> <b>Not applicable</b>
<b>When differences exist; they shall be identified in the General product information section.</b>	
<b>Name and address of factory (ies).....</b>	1) Hangzhou Hikvision Electronics Co., Ltd. No.299, Qiushi Road, Tonglu Economic Development Zone, Tonglu County, Hangzhou, 311500 Zhejiang, P.R. China  2) Hangzhou Hikvision Technology Co., Ltd. No. 700 Dongliu Road Binjiang District, Hangzhou 310052 Zhejiang P.R. China  3) Chongqing Hikvision Technology Co., Ltd. No. 118, Haikang Road, Area C, Jianqiao Industrial Park, Dadukou District, 401325 Chongqing P.R. China
<b>General product information and other remarks:</b>	
<b>Product Description –</b> Refer to original reports CN24QVA3 001 ~ 002 for details. This report shall be used in conjunction with previous reports CN24QVA3 001 ~ 002.	
<b>Description of changes:</b>	
- Add additional models: DS-7616NXI-I2/16P/VPro, DS-7616NXI-I2/16P/VPro/EDU, DS-7616NXI-I2/16P/VPro/LGX, DS-7616NXI-I2/16P/VPro/MFG, DS-7616NXI-I2/16P/VPro/NRG, DS-7616NXI-I2/16P/VPro/RMS, DS-7616NXI-I2/16P/VPro/RTL, DS-7616NXI-I2/16P/VPro/CKV, DS-7616NXI-I2/16P/VPro/HUN, DS-7616NXI-I2/16P/VPro/KVO, DS-7616NXI-I2/16P/VPro/UHK, DS-7616NXI-I2/16P/VPro/UVS, DS-7632NXI-I2/16P/VPro, DS-7632NXI-I2/16P/VPro/EDU, DS-7632NXI-I2/16P/VPro/LGX, DS-7632NXI-I2/16P/VPro/MFG, DS-7632NXI-I2/16P/VPro/NRG, DS-7632NXI-I2/16P/VPro/RMS, DS-7632NXI-I2/16P/VPro/RTL, DS-7632NXI-I2/16P/VPro/CKV, DS-7632NXI-I2/16P/VPro/HUN, DS-7632NXI-I2/16P/VPro/KVO, DS-7632NXI-I2/16P/VPro/UHK, DS-7632NXI-I2/16P/VPro/UVS, NVR-216MH-K/16P/EDU, NVR-216MH-K/16P/LGX, NVR-216MH-K/16P/MFG, NVR-216MH-K/16P/NRG, NVR-216MH-K/16P/RMS, NVR-216MH-K/16P/RTL, NVR-216MH-K/16P/CKV, NVR-216MH-K/16P/HUN, NVR-216MH-K/16P/KVO, NVR-216MH-K/16P/UHK, NVR-216MH-K/16P/UVS, NVR-232MH-K/16P/EDU, NVR-232MH-K/16P/LGX, NVR-232MH-K/16P/MFG, NVR-232MH-K/16P/NRG, NVR-232MH-K/16P/RMS, NVR-232MH-K/16P/RTL, NVR-232MH-K/16P/CKV, NVR-232MH-K/16P/HUN, NVR-232MH-K/16P/KVO, NVR-232MH-K/16P/UHK, NVR-232MH-	

K/16PUVS, which are identical to original model DS-7616NI-Q2/16P except for model designation, no technical differences.

- Add alternative front panel appearance for all models, see the photo documentation for details.
- Add alternative mainboard (Model: DS-80572-P V3.0) and wireless module for all models, see the photo documentation for details.
- Add alternative PCB, DC fan, Appliance couplers, Plug, Flexible cables, RTC Battery for all models, see bold fonts in appended table 4.1.2.
- Delete CVBS port for all models, see the photo documentation for details.
- Correction of model name from DS-7616NXI-M2/22P/VPro/RMS to DS-7616NXI-M2/16P/VPro/RMS due to typo.

For above-described change, all applicable tests were conducted.

**Model Differences –**

All models are identical except for model designation for marketing purpose only, no technical difference.

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

All components or sub-assemblies suitability of use has been checked according to sub clause 4.1.1 and 4.1.2

<b>ENERGY SOURCE IDENTIFICATION AND CLASSIFICATION TABLE:</b>	
(Note 1: Identify the following six (6) energy source forms based on the origin of the energy.) (Note 2: The identified classification e.g., ES2, TS1, should be with respect to its ability to cause pain or injury on the body or its ability to ignite a combustible material. Any energy source can be declared Class 3 as a worse case classification e.g. PS3, ES3.	
<b>Electrically-caused injury (Clause 5):</b>	
(Note: Identify type of source, list sub-assembly or circuit designation and corresponding energy source classification)	
Example: +5 V dc input	
ES1	
<b>Source of electrical energy</b>	<b>Corresponding classification (ES)</b>
Refer to previous report CN24QVA3 002.	
<b>Electrically-caused fire (Clause 6):</b>	
(Note: List sub-assembly or circuit designation and corresponding energy source classification)	
Example: Battery pack (maximum 85 watts):	
PS2	
<b>Source of power or PIS</b>	<b>Corresponding classification (PS)</b>
Refer to previous report CN24QVA3 002.	
<b>Injury caused by hazardous substances (Clause 7)</b>	
(Note: Specify hazardous chemicals, whether produces ozone or other chemical construction not addressed as part of the component evaluation.)	
Example: Liquid in filled component	
Glycol	
<b>Source of hazardous substances</b>	<b>Corresponding chemical</b>
Non-rechargeable Lithium battery (coin type)	Lithium
<b>Mechanically-caused injury (Clause 8)</b>	
(Note: List moving part(s), fan, special installations, etc. & corresponding MS classification based on Table 35.)	
Example: Wall mount unit	
MS2	
<b>Source of kinetic/mechanical energy</b>	<b>Corresponding classification (MS)</b>
Refer to previous report CN24QVA3 002.	
<b>Thermal burn injury (Clause 9)</b>	
(Note: Identify the surface or support, and corresponding energy source classification based on type of part, location, operating temperature and contact time in Table 38.)	
Example: Hand-held scanner – thermoplastic enclosure	
TS1	
<b>Source of thermal energy</b>	<b>Corresponding classification (TS)</b>
Refer to previous report CN24QVA3 002.	
<b>Radiation (Clause 10)</b>	
(Note: List the types of radiation present in the product and the corresponding energy source classification.)	
Example: DVD – Class 1 Laser Product	
RS1	
<b>Type of radiation</b>	<b>Corresponding classification (RS)</b>
Refer to previous report CN24QVA3 002.	

**ENERGY SOURCE DIAGRAM**

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

Refer to “ENERGY SOURCE IDENTIFICATION AND CLASSIFICATION TABLE”

☒ ES    ☒ PS    ☒ MS    ☒ TS    ☒ RS



OVERVIEW OF EMPLOYED SAFEGUARDS				
Clause	Possible Hazard			
5.1	Electrically-caused injury			
Body Part (e.g. Ordinary)	Energy Source (ES3: Primary Filter circuit)	Safeguards		
		Basic	Supplementary	Reinforced (Enclosure)
Refer to previous report CN24QVA3 002.				
6.1	Electrically-caused fire			
Material part (e.g. mouse enclosure)	Energy Source (PS2: 100 Watt circuit)	Safeguards		
		Basic	Supplementary	Reinforced
Refer to previous report CN24QVA3 002.				
7.1	Injury caused by hazardous substances			
Body Part (e.g., skilled)	Energy Source (hazardous material)	Safeguards		
		Basic	Supplementary	Reinforced
Ordinary person	Lithium	N/A	N/A	Comply with Annex M
8.1	Mechanically-caused injury			
Body Part (e.g. Ordinary)	Energy Source (MS3:High Pressure Lamp)	Safeguards		
		Basic	Supplementary	Reinforced (Enclosure)
Refer to previous report CN24QVA3 002.				
9.1	Thermal Burn			
Body Part (e.g., Ordinary)	Energy Source (TS2)	Safeguards		
		Basic	Supplementary	Reinforced
Refer to previous report CN24QVA3 002.				
10.1	Radiation			
Body Part (e.g., Ordinary)	Energy Source (Output from audio port)	Safeguards		
		Basic	Supplementary	Reinforced
Refer to previous report CN24QVA3 002.				
Supplementary Information:				
(1) See attached energy source diagram for additional details.				
(2) “N” – Normal Condition; “A” – Abnormal Condition; “S” Single Fault				

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
<b>4</b>	<b>GENERAL REQUIREMENTS</b>		P
4.1.1	Acceptance of materials, components and subassemblies	See appended table 4.1.2	P
4.1.2	Use of components	Components which are certified to IEC and/or national standards are used correctly within their ratings. Components not covered by IEC standards are tested under the conditions present in the equipment	P
4.1.3	Equipment design and construction	No accessible part which could cause injury.	P
4.1.15	Markings and instructions ..... :	(See Annex F)	P
<b>5</b>	<b>Electrically-caused injury</b>		P
5.4	Insulation materials and requirements		P
5.4.1.4	Maximum operating temperature for insulating materials ..... :	(See appended table 5.4.1.4)	P
5.6.6	Resistance of the protective system	Considered in certified Power Supply.	P
5.6.6.1	Requirements		P
5.6.6.2	Test Method Resistance ( $\Omega$ ) ..... :	(See appended table 5.6.6.2)	P
<b>6</b>	<b>ELECTRICALLY- CAUSED FIRE</b>		P
6.3	Safeguards against fire under normal operating and abnormal operating conditions		P
6.3.1 (a)	No ignition and attainable temperature value less than 90 % defined by ISO 871 or less than 300 °C for unknown materials..... :	(See appended table 5.4.1.5, 6.3.2, 9.0, B.2.6)	P
6.3.1 (b)	Combustible materials outside fire enclosure		N/A
<b>7</b>	<b>INJURY CAUSED BY HAZARDOUS SUBSTANCES</b>		P
7.2	Reduction of exposure to hazardous substances		N/A
7.3	Ozone exposure		N/A
7.4	Use of personal safeguards (PPE)		N/A
	Personal safeguards and instructions..... :		—
7.5	Use of instructional safeguards and instructions		N/A
	Instructional safeguard (ISO 7010) ..... :		—
7.6	Batteries ..... :	(see annex M)	P
<b>9</b>	<b>THERMAL BURN INJURY</b>		P
9.2	Thermal energy source classifications	All accessible surfaces are classified as TS1, see appended table 5.4.1.4, 6.3.2, 9.0, B.2.6.	P
9.3	Safeguard against thermal energy sources		P
9.4	Requirements for safeguards		N/A
9.4.1	Equipment safeguard		N/A
9.4.2	Instructional safeguard ..... :		N/A
<b>B</b>	<b>NORMAL OPERATING CONDITION TESTS, ABNORMAL OPERATING CONDITION TESTS AND SINGLE FAULT CONDITION TESTS</b>		P
B.2	Normal Operating Conditions		P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
B.2.1	General requirements .....	(See Test Item Particulars and appended test tables)	P
	Audio Amplifiers and equipment with audio amplifiers.....		N/A
B.2.3	Supply voltage and tolerances	+10%/-10%	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	Not replaced by ordinary person	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	Compliance.	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		N/A
B.4.3.1	Motor blocked or rotor locked increasing the internal ambient temperature .....	(See Clause G.5)	N/A
B.4.4	Short circuit of functional insulation	(See appended table B.4)	P
B.4.4.1	Short circuit of clearances for functional insulation	(See appended table B.4)	P
B.4.4.2	Short circuit of creepage distances for functional insulation		P
B.4.4.3	Short circuit of functional insulation on coated printed boards		N/A
B.4.5	Short circuit and interruption of electrodes in tubes and semiconductors		P
B.4.6	Short circuit or disconnect of passive components		P
B.4.7	Continuous operation of components		N/A
B.4.8	Class 1 and Class 2 energy sources within limits during and after single fault conditions	(See appended table B.4)	P
B.4.9	Battery charging under single fault conditions .....	(See Annex M)	P
<b>M</b>	<b>EQUIPMENT CONTAINING BATTERIES AND THEIR PROTECTION CIRCUITS</b>		P
M.1	General requirements		P
M.2	Safety of batteries and their cells		P
M.2.1	Requirements		P
M.2.2	Compliance and test method (identify method) ..	See below.	P
M.3	Protection circuits		P
M.3.1	Requirements		P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
M.3.2	Tests		P
	- Overcharging of a rechargeable battery		N/A
	- Unintentional charging of a non-rechargeable battery	Not unintentional charging occurred for construction design.	P
	- Reverse charging of a rechargeable battery		N/A
	- Excessive discharging rate for any battery	(See appended Tables and Annex M)	P
M.3.3	Compliance ..... :	(See appended Tables and Annex M.3)	P
<b>Q</b>	<b>CIRCUITS INTENDED FOR INTERCONNECTION WITH BUILDING WIRING</b>		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		P
Q.1.1 c)	Overcurrent protective device limited output		N/A
Q.1.1 d)	IC current limiter complying with G.9		N/A
Q.1.2	Compliance and test method	See appended table Annex Q.1.	P
Q.2	Test for external circuits – paired conductor cable		N/A
	Maximum output current (A) ..... :		—
	Current limiting method..... :		—

IEC 62368-1					
Clause	Requirement + Test			Result - Remark	Verdict
4.1.2	TABLE: List of critical components				P
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity <sup>1) 2)</sup>
Switching power supply	Shenzhen Huntkey Electric Co., Ltd.	HDZ2802-3A S2	Input: 100-240 Vac, 5A, 50-60Hz, output: +52 Vdc/4.6 A, +12 Vdc/5 A max, Max. 280 W	IEC 62368-1	CB Certificate No.: (NO120868)
(alternative)	CHANNEL WELL TECHNOLOGY CO., LTD	KSA-300S2	Input: 100-240 Vac, 5A, 50-60Hz, output: +52 Vdc/4.6 A, +12 Vdc/3.33 A max, Max. 280 W	IEC 62368-1:2014	CB Certificate No.: (JPTUV-102846)
(alternative)	Delta Electronics, Inc.	DPS-280AB-4A	Input: 100-240 Vac, 47-63 Hz, 3-6 A; Output: +52 Vdc/4.6 A max, +12Vdc/3.4 A max, Max 280 W, 5000 m	IEC 62368-1:2014	CB Certificate No.: (JPTUV-099682)
(alternative)	ACBEL POLYTECH INC.	FLXA2281A	Input: 100-240 Vac, 50-60 Hz, 6 A; Output: +52 Vdc/4.6 A, +12Vdc/5.0 A max, Max 280 W, 5000m	IEC 62368-1:2018	Nemko CB Certificate No.: (NO122998)
(alternative)	DELTA ELECTRONICS INC	DPS-280AB-8 A	Input: 100-240 Vac, 50-60 Hz, 5 A; Output: +52 Vdc/4.6 A, +12Vdc/6.0 A max, Max 280 W, 5000m	IEC 62368-1:2018	CB Certificate No.: (JPTUV-135150)
PCB	HUIZHOU CHINA EAGLE ELECTRONIC TECHNOLOGY CO LTD	CA-F121	V-0, 130 °C	UL 796	UL E198681
(alternative)	SHENZHEN KINWONG ELECTRONIC CO LTD	8B	V-0, 130 °C	UL 796	UL E243951

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
(alternative)	GUANGZHOU FAST-PRINT CIRCUIT TECHNOLOGY CO LTD	M11	V-0, 130 °C	UL 796	UL E204460
(alternative)	ZHEJIANG OULONG ELECTRIC CO LTD	OL-D	V-0, 130 °C	UL 796	UL E231017
(alternative)	<b>SHENZHEN MANKUN ELECTRONICS CO LTD</b>	<b>MK-D</b>	<b>V-0,130°C</b>	<b>UL796、 UL94</b>	<b>UL E248237</b>
(alternative)	<b>SUNSHINE GLOBAL CIRCUITS CO LTD</b>	<b>SS-3</b>	<b>V-0,130°C</b>	<b>UL796</b>	<b>UL E229342</b>
(alternative)	<b>WENZHOU GALAXY ELECTRONICS CO LTD</b>	<b>01V0</b>	<b>V-0,130°C</b>	<b>UL796、 UL94</b>	<b>UL E157634</b>
(alternative)	Interchangeable	--	V-0, 130 °C	UL 796	UL
RTC Battery (Button Type)	POWER GLORY BATTERY TECH(SHENZHEN)CO.,LTD	CR1220	Non-rechargeable, Max Abnormal Charging Current 10mA Max Abnormal Charging Voltage 5.0V dc	UL 1642 IEC/EN/UL/CSA 62368-1	UL MH29853 Test with appliance
(alternative)	GUANGZHOU TIANQIU ENTERPRISE CO LTD	CR1220	Non-rechargeable, Max Abnormal Charging Current 2.5 mA Max Abnormal Charging Voltage 3.5 V dc	UL 1642 IEC/EN/UL/CSA 62368-1	UL MH48705 Test with appliance
(alternative)	<b>Guangdong TIANQIU Electronics Technology Co Ltd</b>	<b>CR2032</b>	<b>Nonrechargeable ,Max Abnormal Charging Current 10mA Max Abnormal Charging Voltage 3.5V dc</b>	<b>UL 1642 IEC/EN/UL/CSA 62368-1</b>	<b>UL MH48705</b>
Metal enclosure	--	--	Metal, thickness 1.5 mm min.	IEC 62368-1	Test with appliance

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Front plastic cover	KINGFA SCI & TECH CO LTD	FRABS-518	V-0, 60 °C, thickness 1.4 mm min.	UL 94	UL E171666
(alternative)	NINGBO LG YONGXING CHEMICAL CO LTD	HI-121H	Thickness 1.4 mm, HB	UL 94 IEC/EN/UL/CSA IEC 62368-1	UL E203955 Test with appliance
(alternative)	KINGFA SCI & TECH CO LTD	HP-126	Thickness 1.2 mm, HB	UL 94 IEC/EN/UL/CSA IEC 62368-1	UL E171666 Test with appliance
(alternative)	Interchangeable	--	V-0, 60 °C, thickness 1.2 mm min.	UL 94	UL
DC fan	Sunonwealth Electric Machine Industry Co.,Ltd	FD124010LB	12 Vdc, 55 mA,, 5.7 CFM, 5000 RPM	EN 62368-1:2014+A11	TUV R 50019837
(alternative)	Sunonwealth Electronics (Kunshan) Co.,Ltd.	HA40101V4-000C-999	12 Vdc, 65 mA, 5.3 CFM, 4500 RPM	EN 62368-1:2014	TUV R 50016065
(alternative)	Yen Sun Technology Corp.	FD124010, FD124010LB	12 Vdc, 55 mA, 4500 RPM, 4.5 CFM	EN 62368-1:2014	TUV R 50027591
(alternative)	Dongguan Protechnic Electric Co., Ltd.	MGA4012SB-O10	12 Vdc, 60 mA, 5.3 CFM, 4600 RPM	EN 62368-1:2014	TUV B 031023 0138
(alternative)	Asia Vital Components Co.,Ltd.	DAZA0410B2H-021	12 Vdc, 60 mA, 6.89 CFM, 5000 RPM	EN 62368-1:2014	TUV B 025730 0883
(alternative)	Sunonwealth Electric Machine Industry Co.,Ltd	KD1204PFB3	12 Vdc, 55 mA, 5000 RPM, 5.7 CFM	EN 62368-1:2014	TUV R 50019837
(alternative)	Dongguan Protechnic Electric Co., Ltd.	MGA4012SR-O10	12 Vdc, 60 mA, 4600 RPM, 5.3 CFM	EN 62368-1:2014+A11:2017	TUV SUD Certif. No. B 031023 0138 Rev. 00
(alternative)	Asia Vital Components Co., Ltd.	DAZA0410R2H-016	12 Vdc, 60 mA, 4500 RPM, 5.72 CFM	EN 62368-1:2014+A11:2017	TUV SUD Certif. No. B 025730 0883 Rev. 13
(alternative)	Dongguan Protechnic Electric Co., Ltd.	MGA4012SB-O10	12 Vdc, 60 mA, 5200 RPM, 6.07 CFM	EN 62368-1:2014+A11:2017	TUV SUD Certif. No. B 031023 0138 Rev. 00
(alternative)	Asia Vital Components Co., Ltd.	DAZA0410B2H-022	12 Vdc, 60 mA, 5000 RPM, 6.89 CFM	EN 62368-1:2014+A11:2017	TUV SUD Certif. No. B 025730 0883 Rev. 13
(alternative)	Yen Sun Technology Corp.	FD124010LB(2N3 )	12 Vdc, 90 mA, 4500RPM, 4.5 CFM	EN 62368-1:2014	TUV R 50027591

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
(alternative)	Shenzhen Yongyihao Electronic Co., Ltd.	YY4010L12S	12VDC, 90 mA, 5500 RPM, 5.67CFM	EN 62368- 1:2014/A11:2017	TUV SUD Certif. No. B 090231 0008 Rev. 00
(alternative)	Asia Vital Components Co.,Ltd.	DAZA0410B2H	12 Vdc, 60 mA, 6.89 CFM	EN 62368- 1:2014/A11:2017	TUV SUD Certif. No. B 025730 0883 Rev. 13
(alternative)	Foxconn Technology Co., Ltd.	PVA040C12L	12VDC, 100 mA, 5000 RPM, 5.4CFM	EN 62368- 1:2014+A11 EN IEC 62368- 1:2020+A11	TUV R 50372119
(alternative)	Dongguan Protechnic Electric Co., Ltd.	MGA4012LB-O15	12VDC, 90 mA, 6.15CFM	EN IEC 62368- 1:2020/A11:2020	TUV SUD Certif. No. B 031023 0141 Rev. 02
(alternative)	Asia Vital Components Co.,Ltd.	DAZA0410Z2HV (above "Z" can be B or R;"V" can be ABCD where A, B, C, D may be A-Z, 0-9, "-" or blank.)	12VDC, 0.06A, 5.72CFM	EN IEC 62368- 1:2020/A11:2020	TUV SUD Certif. No. B 025730 0970 Rev. 13
IC chip (UL3, UL4)	Joulwatt	JW7115S- 2SOTA#TRPBF	Input: 2.7 - 5.5 Vd.c.; Max. 3.0 A; Output: -0.3 - 6.5 Vd.c.; Max. 3.2A; 85°C, Class III	IEC 62368-1:2014	UL certificate No. DK-90295-UL
(alternative)	Richtek	RT9742..G.	Input: 2.7 - 6Vd.c.; Max. 2.5 A; Output: -0.3 - 6.5 Vd.c.; Max. 4.5A; 85°C, Class III	IEC 62368-1:2014	Nemko certificate No. NO109777
(alternative)	Joulwatt	JW7115S- 1SOTA#TRPBF	Input: 2.7 - 5.5 Vd.c.; Max. 3.0 A; Output: -0.3 - 6.5 Vd.c.; Max. 3.2A; 85°C, Class III	IEC 62368-1:2014	UL certificate No. DK-92033-UL
IC Overcurrent Protector (For USB2.0/ USB3.0)	DIODES INC	AP2822CKBTR- G1	Input voltage: 2.7- 5.5Vdc Rated output: 1A. 85°C, Class III	IEC 62368-1:2014	UL certificate No. US-34501-UL
(alternative)	DIODES INC	AP22816AKBWT- 7	Input voltage: 2.7- 5.5Vdc Rated output: 1A. 85°C, Class III	IEC 62368-1:2014	UL certificate No. US-38695-UL



IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
(alternative)	DIODES INC	AP2822GKBTR-G1	Input voltage: 2.7-5.5Vdc Rated output: 2A. 85°C, Class III	IEC 62368-1:2014	UL certificate No. US-34501-UL
(alternative)	DIODES INC	AP22818AKBWT-7	Input voltage: 2.7-5.5Vdc Rated output: 2A. 85°C, Class III	IEC 62368-1:2014	UL certificate No. US-38695-UL
(alternative)	Richtek Technology Corp.	RT9742MGJ5	Input voltage: 2.7-6Vdc Rated output: 1.5A. 85°C, Class III	IEC 62368-1:2014	Nemko certificate No. NO109777
(alternative)	Richtek Technology Corp.	RT9742CGJ5F	Input voltage: 2.7-6Vdc Rated output: 2A. 85°C, Class III	IEC 62368-1:2014	Nemko certificate No. NO109777
(alternative)	Richtek Technology Corp.	RT9742GGJ5F	Input voltage: 2.7-6Vdc Rated output: 1A. 85°C, Class III	IEC 62368-1:2014	Nemko certificate No. NO109777
(alternative)	Richtek Technology Corp.	RT9742VGJ5	Input voltage: 2.7-6Vdc Rated output: 2A. 85°C, Class III	IEC 62368-1:2014	Nemko certificate No. NO109777
(alternative)	JOULWATT TECHNOLOGY CO LIMITED	JW7115S-1SOTA#TRPBF	Input: 2.7 - 5.5 Vd.c.; Rated output: 1A. 85°C, Class III	IEC 62368-1:2014	UL certificate No. DK-92033-UL
(alternative)	JOULWATT TECHNOLOGY CO LIMITED	JW7115S-2SOTA#TRPBF	Input: 2.7 - 5.5 Vd.c.; Rated output: 2.05A. 85°C, Class III	IEC 62368-1:2014	UL certificate No. DK-90295-UL
(alternative)	Sg Micro Corp	SGM2580CYN5G/TR	Input: 2.5 - 5.5 Vd.c.; Output: 2.1A. Max. 85°C, Class III	IEC 62368-1:2014	SGS certificate No. BE-38642/M1
(alternative)	Sg Micro Corp	SGM2584AYN5G/TR	Input: 2.5 - 5.5 Vd.c.; Output: 1A. Max. 85°C, Class III	IEC 62368-1:2018	SGS certificate No. BE-39069

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
(alternative)	Sg Micro Corp	SGM2588AYN5G/TR	Input: 2.5 - 5.5 Vd.c.; Output: 1.1A. Max. 85°C, Class III	IEC 62368-1:2014	SGS certificate No. BE-38642/M1
(alternative)	Sg Micro Corp	SGM2588GYN5G/TR	Input: 2.5 - 5.5 Vd.c.; Output: 1.1A. Max. 85°C, Class III	IEC 62368-1:2014	SGS certificate No. BE-38642/M1
(alternative)	Shenzhen Lowpower Semiconductor CO., Ltd	LPW5202SDB5F1	Input: 2.4 - 6.0 Vd.c.; Output: 1.35A. Max. 85°C, Class III	IEC 62368-1:2018	TUV Rheinland certificate No. JPTUV-141625
Polymeric Thermistors (For USB2.0/USB3.0/HDMI)	CYG Wayon Circuit Protection Co., Ltd.	LP-ISML200	Max. Non-tripping Current 2.0A, Tripping Current 4.0A, Maximum Voltage: 8VDC 85°C, Class III	EN 62319-1:2005 EN 62319-1:2005 Comply with clauses 15, 17, J15 and J17 of IEC 60730-1:2013	TUV Rheinland certificate No. R50318402 0001
(alternative)	CYG Wayon Circuit Protection Co., Ltd.	LP-ISML110	Max. Non-tripping Current 1.1A, Tripping Current 2.2A, Maximum Voltage: 8VDC 85°C, Class III	EN 62319-1:2005 EN 62319-1:2005 Comply with clauses 15, 17, J15 and J17 of IEC 60730-1:2013	TUV Rheinland certificate No. R50318402 0001
Polymeric Thermistors (For HDMI and front panel control circuit)	CYG Wayon Circuit Protection Co., Ltd.	LP-TSM020	Max. Non-tripping Current 0.2A, Tripping Current 0.5A, Maximum Voltage: 9VDC 85°C, Class III	EN 62319-1:2005 EN 62319-1:2005 Comply with clauses 15, 17, J15 and J17 of IEC 60730-1:2013	TUV Rheinland certificate No. R50318402 0001
(alternative)	Polytronics Technology Corp.	SMD0603P020TF	Max. Non-tripping Current 0.2A, Tripping Current 0.5A, Maximum Voltage: 9VDC 85°C, Class III	EN 62319-1:2005 IEC 62319-1:2005 EN 62319-1:2005 IEC 62319-1:2005 Comply with clauses 15, 17, J15 and J17 of EN 60730-1:2010	TUV Rheinland certificate No. R50099121 0070
Flexible cables	LINOYA ELECTRONIC TECHNOLOGY CO LTD	H05VV-F	3 x 0,75 mm <sup>2</sup>	DIN EN 50525-2-11 (VDE 0285-525-2-11):2012-01; EN 50525-2-11:2011	VDE 40035072

IEC 62368-1					
Clause	Requirement + Test			Result - Remark	Verdict
(alternative)	Hangzhou Hongshi Electrical Ltd.	H05VV-F	3 x 0,75 mm <sup>2</sup>	DIN EN 50525-2-11 (VDE 0285-525-2-11):2012-01; EN 50525-2-11:2011	VDE 40010839
(alternative)	Phino Electric Co.,Ltd	H05VV-F	3 x 0,75 mm <sup>2</sup>	DIN EN 50525-2-11(VDE 0285-525-2-11):2012-01; EN 50525-2-11:2011	VDE 113841
(alternative)	<b>CIXI WANNENG ELECTRON CO., LTD</b>	<b>H05VV-F</b>	<b>3 x 0,75 mm<sup>2</sup></b>	<b>DIN EN 50525-2-11 (VDE 0285-525-2-11):2012-01; EN 50525-2-11:2011</b>	<b>VDE 40044024</b>
(alternative)	Interchangeable	--	3 x 0,75 mm <sup>2</sup> , 6A 250V~	DIN EN 50525-2-11(VDE 0285-525-2-11):2012-01;EN 50525-2-11:2011	--
Appliance couplers (Connector, non-rewirable)	LINOYA ELECTRONIC TECHNOLOGY CO LTD	XYC-03	10A 250V~	DIN EN 60320-1 (VDE 0625-1):2016-04; EN 60320-1:2015 + AC:2016 IEC 60320-1:2015	VDE 40016051
(alternative)	Phino Electric Co., Ltd	PHS 301	10A 250V~	IEC 60320-1:2015 DIN EN 60320-1 (VDE 0625-1):2016-04; EN 60320-1:2015 + AC:2016	VDE 40038017
(alternative)	<b>CIXI WANNENG ELECTRONCO., LTD</b>	<b>WN-W01</b>	<b>10A 250V~</b>	<b>EN 60320-1:2015</b>	<b>DEKRA 2197045.01</b>
(alternative)	Interchangeable	--	10A 250V~	IEC 60320-1:2015 DIN EN 60320-1 (VDE 0625-1):2016-04; EN 60320-1:2015 + AC:2016	--
Plug	LINOYA ELECTRONIC TECHNOLOGY CO LTD	XYP-02L	16A 250V~	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 40015292
(alternative)	Hangzhou Hongshi Electrical Ltd.	SW102	16A 250V~	DIN VDE 0620-2-1/A1 (VDE 0620-2-1/A1):2017-09 DIN VDE 0620-2-1 (VDE 0620-2-1):2016-01	VDE 40004330

IEC 62368-1					
Clause	Requirement + Test			Result - Remark	Verdict
(alternative)	Phino Electric Co.,Ltd.	PHP-206	16A 250V~	DIN VDE 0620-2-1/A1 (VDE 0620-2-1/A1):2017-09 DIN VDE 0620-2-1 (VDE 0620-2-1):2016-01	VDE 40013375
(alternative)	CIXI WANNENG ELECTRONCO., LTD	D003	16A 250V~	DIN VDE 0620-2-1/A1 (VDE 0620-2-1/A1):2017-09 DIN VDE 0620-2-1 (VDE 0620-2-1):2016-01	UL VDE 40044952
(alternative)	Interchangeable	--	16A 250V~	DIN VDE 0620-2-1/A1 (VDE 0620-2-1/A1):2017-09 DIN VDE 0620-2-1 (VDE 0620-2-1):2016-01	--
Supplementary information: <sup>1)</sup> Provided evidence ensures the agreed level of compliance. See OD-CB2039. <sup>2)</sup> License available upon request					

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) .....	90V/60Hz		264V/50Hz		—	
	Ambient T <sub>min</sub> (°C) .....	--		--		—	
	Ambient T <sub>max</sub> (°C) .....	--		--		—	
	Tma (°C) .....	See below		See below		—	
Maximum measured temperature T of part/at:		T (°C)				Allowed T <sub>max</sub> (°C)	
T501 primary coil		73.7	106.3	71.4	104	110	
T501 secondary coil		47.8	80.4	47.1	79.7	110	
T501 core		57.0	89.6	56.1	88.7	110	
T901 coil		38.5	71.1	38.3	70.9	110	
T901 core		37.2	69.8	37.0	69.6	110	
CN1		31.2	63.8	31.4	64.0	85	
Z1		39.3	71.9	37.9	70.5	85	
RTC		32.3	64.9	32	64.6	100	
HDD		38.7	71.3	37.7	70.3	Ref.	
PWB under BD1		76.8	109.4	51.8	84.4	130	
PCB near UP1(8459 V3.0)		33.3	65.9	33.2	65.8	130	
PCB near U1(80572_P V3.0)		41.9	74.5	42.6	75.2	130	
PCB near U1(82133 V1.0)		39.5	72.1	39.4	72.0	130	
PCB near U1(81201 V2.1)		45.0	77.6	44.9	77.5	130	
PCB near CU2(81183 V3.0)		26.7	59.3	26.6	59.2	130	
plastic enclosure inside		38.4	71.0	38.3	70.9	Ref.	
Ambient		22.4	→55.0	22.4	→55.0	--	
Following for accessible touch temperature:							
L pin of socket		33.6	36.2	31.8	34.4	77 <sup>1)</sup>	
metal enclosure		32.5	35.1	31.9	34.5	60 <sup>1)</sup>	
plastic enclosure		28.8	31.4	28.8	31.4	77 <sup>1)</sup>	
Ambient		22.4	→25.0	22.4	→25.0	--	
Supplementary information:							
1) Thermocouple method was used to measure the winding, the limit value is reduced by 10 K							
Temperature T of winding:		t <sub>1</sub> (°C)	R <sub>1</sub> (Ω)	t <sub>2</sub> (°C)	R <sub>2</sub> (Ω)	T (°C)	Allowed T <sub>max</sub> (°C)
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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

## Supplementary information:

Supplementary information:

Note 1: T<sub>ma</sub> should be considered as directed by applicable requirementNote 2: T<sub>ma</sub> is not included in assessment of Touch Temperatures (Clause 9)1. All values for T(°C) are re-calculated from T<sub>amb</sub> respectively.

2. Time of contact was determined by the manufacturer: &gt; 1 s and &lt; 10 s.

3. Tested on model: DS-7632NXI-I2/16P/VPro

4. Test with power supply DPS-280AB-4 A.

5. Test load condition: Max normal work, 8T HDD\*2, USB2.0 load 0.5A, USB3.0 load 0.9A, PoE load 200W.

5.4.1.4, 6.3.2, 9.0, B.2.6	TABLE: Temperature measurements				P
	Supply voltage (V) .....	90V/60Hz	264V/50Hz	—	—
	Ambient T <sub>min</sub> (°C) .....	--	--	—	—
	Ambient T <sub>max</sub> (°C) .....	--	--	—	—
	T <sub>ma</sub> (°C) .....	See below	See below	—	—
Maximum measured temperature T of part/at:		T (°C)			Allowed T <sub>max</sub> (°C)
T501 coil	57.2	87.9	57.4	88.5	110
T501 core	45.2	75.9	45.1	76.2	110
T901 coil	36.4	67.1	36.3	67.4	110
T901 core	39.9	70.6	39.7	70.8	110
L152 coil	45.2	75.9	45.8	76.9	130
FL1 coil	38.0	68.7	45.9	77.0	90
L801 coil	37.3	68.0	48.2	79.3	130
C801 (near L801)	34.0	64.7	35.2	66.3	85
RTC	32.9	63.6	32.5	63.6	100
PWB (under BD1)	39.7	70.4	47.3	78.4	130
PCB near UP1(8459 V3.0)	34.5	65.2	34.3	65.4	130
PCB near U1(81201 V2.1)	33.7	64.4	33.2	64.3	130
PCB near U1(80572_P V3.0)	49.5	80.2	49.2	80.3	130
PCB near U1(82133 V1.0)	38.5	69.2	37.9	69.0	130
PCB near CU2(81183 V3.0)	28.8	59.5	27.7	58.8	130
plastic enclosure inside	30.8	61.5	30.5	61.6	Ref.
Ambient	24.3	→55.0	23.9	→55.0	--
Following for accessible touch temperature:					
L pin of Inlet	35.0	35.7	35.4	36.5	77 <sup>1)</sup>
metal enclosure	33.8	34.5	33.6	34.7	60 <sup>1)</sup>
plastic enclosure	27.8	28.5	27.7	28.8	77 <sup>1)</sup>
Ambient	24.3	→25.0	23.9	→25.0	--

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Clause	Requirement + Test	Result - Remark	Verdict

## Supplementary information:

<sup>1)</sup> Thermocouple method was used to measure the winding, the limit value is reduced by 10 K

Temperature T of winding:	t <sub>1</sub> (°C)	R <sub>1</sub> (Ω)	t <sub>2</sub> (°C)	R <sub>2</sub> (Ω)	T (°C)	Allowed T <sub>max</sub> (°C)	Insulation class
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## Supplementary information:

## Supplementary information:

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

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

1. All values for T(°C) are re-calculated from T<sub>amb</sub> respectively.

2. Time of contact was determined by the manufacturer: > 1 s and < 10 s.

3. Tested on model: DS-7632NXI-I2/16P/VPro

4. Test with power supply DPS-280AB-8 A.

5. Test load condition: Max normal work, 8T HDD\*2, USB2.0 load 0.5A, USB3.0 load 0.9A, PoE load 200W.

5.4.1.4, 6.3.2, 9.0, B.2.6	TABLE: Temperature measurements				P	
	Supply voltage (V) .....:	90V/60Hz		264V/50Hz	—	
	Ambient T <sub>min</sub> (°C) .....:	--		--	—	
	Ambient T <sub>max</sub> (°C) .....:	--		--	—	
	T <sub>ma</sub> (°C) .....:	See below		See below	—	
Maximum measured temperature T of part/at:		T (°C)				Allowed T <sub>max</sub> (°C)
T1 coil		52.7	83.8	52.3	83.3	110
T1 core		46.8	77.9	46.4	77.4	110
L5 coil		46.9	78.0	40.4	71.4	120
LC2 coil		55.6	86.7	41.4	72.4	120
L3 coil		49.9	81.0	40.6	71.6	120
L3 core		51.6	82.7	43.5	74.5	120
CX2		45.3	76.4	41.4	72.4	105
CY2		42.4	73.5	39.3	70.3	125
C4		42.0	73.1	39.9	70.9	105
MOV1		40.1	71.2	38.5	69.5	85
M205		38.7	69.8	36.9	67.9	110
RTC		42.2	73.3	41.9	72.9	100
PCB under RT1		52.8	83.9	47.6	78.6	130
PCB near U1(81201 V2.1)		32.0	63.1	31.9	62.9	130
PCB near U1(80572_P V3.0)		56.2	87.3	56.1	87.1	130
PCB near UP1(8459 V3.0)		35.4	66.5	35.4	66.4	130
PCB near U1(82133 V1.0)		38.7	69.8	38.7	69.7	130

IEC 62368-1							
Clause	Requirement + Test			Result - Remark		Verdict	
PCB near CU2(81183 V3.0)	27.1	58.2	28.1	59.1	130		
SW inside	37.0	68.1	35.6	66.6	70		
AC Inlet inside	36.3	67.4	35.4	66.4	80		
plastic enclosure inside	36.1	67.2	36.1	67.1	Ref.		
Ambient	23.9	→55.0	24.0	→55.0	--		
Following for accessible touch temperature:							
Input wire (L)	37.8	38.9	36.5	37.5	77 <sup>1)</sup>		
Output wire	32.7	33.8	32.4	33.4	77 <sup>1)</sup>		
metal enclosure outside near T1 Top	38.0	39.1	37.2	38.2	60 <sup>1)</sup>		
metal enclosure outside near T1 Bottom	39.5	40.6	38.1	39.1	60 <sup>1)</sup>		
metal enclosure outside near AC Inlet	35.4	36.5	34.3	35.3	60 <sup>1)</sup>		
metal enclosure outside	34.7	35.8	34.5	35.5	60 <sup>1)</sup>		
plastic enclosure outside	29.0	30.1	29.2	30.2	77 <sup>1)</sup>		
AC inlet	37.8	38.9	36.5	37.5	77 <sup>1)</sup>		
Ambient	23.9	→25.0	24.0	→25.0	--		
Supplementary information:							
1) Thermocouple method was used to measure the winding, the limit value is reduced by 10 K							
Temperature T of winding:	t <sub>1</sub> (°C)	R <sub>1</sub> (Ω)	t <sub>2</sub> (°C)	R <sub>2</sub> (Ω)	T (°C)	Allowed T <sub>max</sub> (°C)	Insulation class
--	--	--	--	--	--	--	--
Supplementary information:							
Note 1: Tma should be considered as directed by applicable requirement							
Note 2: Tma is not included in assessment of Touch Temperatures (Clause 9)							
1. All values for T(°C) are re-calculated from Tamb respectively.							
2. Time of contact was determined by the manufacturer: > 1 s and < 10 s.							
3. Tested on model: DS-7632NXI-I2/16P/VPro							
4. Test with power supply FLXA2281A-G9TA.							
5. Test load condition: Max normal work, 8T HDD*2, USB2.0 load 0.5A, USB3.0 load 0.9A, PoE load 200W.							

<b>5.4.1.4, 6.3.2, 9.0, B.2.6</b>	<b>TABLE: Temperature measurements</b>				P
	Supply voltage (V) .....	90V/60Hz	264V/50Hz	—	
	Ambient T <sub>min</sub> (°C) .....	--	--	—	
	Ambient T <sub>max</sub> (°C) .....	--	--	—	
	T <sub>ma</sub> (°C) .....	See below	See below	—	
Maximum measured temperature T of part/at:		T (°C)			Allowed T <sub>max</sub> (°C)
CY3 body	34.9	68.4	52.3	83.3	125
MOV1 body	33.5	67.0	46.4	77.4	85
LF1 coil	41.3	74.8	40.4	71.4	120
CX2 body	38.4	71.9	41.4	72.4	105



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Clause	Requirement + Test			Result - Remark			Verdict
LF2 coil	46.9	80.3	40.6	71.6	120		
L1 coil	46.5	80.0	43.5	74.5	120		
C2 body	38.3	71.7	41.4	72.4	105		
T1 coil	47.0	80.5	39.3	70.3	110		
T1 core	41.4	74.8	39.9	70.9	110		
IC302 body	30.9	64.3	38.5	69.5	110		
Mylar sheet inside near T1	30.7	64.1	36.9	67.9	105		
RTC	31.6	65.0	41.9	72.9	100		
PCB under Q3	42.2	75.7	47.6	78.6	130		
PCB under BD1	37.7	71.1	31.9	62.9	130		
PCB near U1(81201 V2.1)	44.6	78.0	56.1	87.1	130		
PCB near U1(80572_P V3.0)	44.2	77.6	35.4	66.4	130		
PCB near UP1(8459 V3.0)	29.5	62.9	38.7	69.7	130		
PCB near U1(82133 V1.0)	38.1	71.6	28.1	59.1	130		
PCB near CU2(81183 V3.0)	30.5	63.9	35.6	66.6	130		
enclosure plastic(inside)	28.9	62.3	35.4	66.4	Ref.		
Ambient	23.9	→55.0	24.0	→55.0	--		
Following for accessible touch temperature:							
input wire	33.8	37.3	30.7	35.1	80 <sup>1)</sup>		
AC inlet	32.1	35.5	29.5	33.9	70 <sup>1)</sup>		
metal enclosure	32.8	36.2	30.8	35.1	60 <sup>1)</sup>		
plastic enclosure outside	27.5	31.0	25.7	30.1	77 <sup>1)</sup>		
Ambient	23.9	→25.0	24.0	→25.0	--		
Supplementary information:							
<sup>1)</sup> Thermocouple method was used to measure the winding, the limit value is reduced by 10 K							
Temperature T of winding:	t <sub>1</sub> (°C)	R <sub>1</sub> (Ω)	t <sub>2</sub> (°C)	R <sub>2</sub> (Ω)	T (°C)	Allowed T <sub>max</sub> (°C)	Insulation class
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Supplementary information:							
Note 1: T <sub>ma</sub> should be considered as directed by applicable requirement							
Note 2: T <sub>ma</sub> is not included in assessment of Touch Temperatures (Clause 9)							
1. All values for T(°C) are re-calculated from T <sub>amb</sub> respectively.							
2. Time of contact was determined by the manufacturer: > 1 s and < 10 s.							
3. Tested on model: DS-7632NXI-I2/16P/VPro							
4. Test with power supply HDZ2802-3A.							
5. Test load condition: Max normal work, 8T HDD*2, USB2.0 load 0.5A, USB3.0 load 0.9A, PoE load 200W.							

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	
90	50	3.12	--	277.67	--	F1	3.12	Max normal work, 8T HDD*2 USB2.0 load 0.5A USB3.0 load 0.9A PoE load 200W	
100	50	2.78	3.2	274.37	--	F1	2.78		
240	50	1.13	3.2	262.59	--	F1	1.13		
264	50	1.05	--	262.65	--	F1	1.05		
90	60	3.12	--	278.38	--	F1	3.12		
100	60	2.76	3.2	275.08	--	F1	2.76		
240	60	1.14	3.2	262.73	--	F1	1.14		
264	60	1.05	--	262.28	--	F1	1.05		
Supplementary information:									
Equipment may be have rated current or rated power or both. Both should be measured. Test with power supply DPS-280AB-4 A.									

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	
90	50	2.96	--	265.59	--	F1	2.96	Max normal work, 8T HDD*2 USB2.0 load 0.5A USB3.0 load 0.9A PoE load 200W	
100	50	2.64	3.2	263.53	--	F1	2.64		
240	50	1.08	3.2	252.77	--	F1	1.08		
264	50	0.98	--	252.98	--	F1	0.98		
90	60	2.97	--	265.93	--	F1	2.97		
100	60	2.64	3.2	262.75	--	F1	2.64		
240	60	1.08	3.2	252.24	--	F1	1.08		
264	60	0.98	--	250.09	--	F1	0.98		
Supplementary information:									
Equipment may be have rated current or rated power or both. Both should be measured. Test with power supply HDZ2802-3A.									

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	
90	50	2.96	--	266.20	--	F1	2.96	Max normal work, 8T HDD*2 USB2.0 load 0.5A USB3.0 load 0.9A PoE load 200W	
100	50	2.66	3.2	264.14	--	F1	2.66		
240	50	1.23	3.2	252.66	--	F1	1.23		
264	50	0.99	--	251.80	--	F1	0.99		
90	60	2.97	--	267.28	--	F1	2.97		
100	60	2.65	3.2	263.37	--	F1	2.65		
240	60	1.25	3.2	254.55	--	F1	1.25		
264	60	0.99	--	253.14	--	F1	0.99		
Supplementary information:									
Equipment may be have rated current or rated power or both. Both should be measured. Test on power supply FLXA2281A-G9TA.									

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	
90	50	2.94	--	261.67	--	F1	2.94	Max normal work, 8T HDD*2 USB2.0 load 0.5A USB3.0 load 0.9A PoE load 200W	
100	50	2.63	3.2	259.85	--	F1	2.63		
240	50	1.11	3.2	250.52	--	F1	1.11		
264	50	1.02	--	250.12	--	F1	1.02		
90	60	2.94	--	262.03	--	F1	2.94		
100	60	2.63	3.2	259.42	--	F1	2.63		
240	60	1.12	3.2	250.42	--	F1	1.12		
264	60	1.02	--	249.99	--	F1	1.02		
Supplementary information:									
Equipment may be have rated current or rated power or both. Both should be measured. Test on power supply DPS-280AB-8 A.									

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

B.3		TABLE: Abnormal operating condition tests						P
Ambient temperature (°C) .....		22.6						—
Power source for EUT: Manufacturer, model/type, output rating .....		--						—
Component No.	Abnormal Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
Openings	Blocked	90	2h	--	3.13	Type K	T501 primary coil : 77.9 °C, T501 secondary coil : 54.6 °C, T501 core : 61 °C, T901 coil : 42.7 °C, T901 core : 40.9 °C, CN1 : 36.5 °C, Z1 : 43.7 °C, PWB under BD1 : 79.6 °C, PCB near UP1(8459 V3.0) : 36.1 °C, PCB near U1(80572_P V3.0) : 43.3 °C, RTC : 42.2 °C, PCB near U1(82133 V1.0) : 44 °C, PCB near U1(81201 V2.1) : 44.8 °C, PCB near CU2(81183 V3.0) : 29.2 °C, plastic enclosure inside : 39.6 °C, L pin of socket : 36.1 °C, metal enclosure : 31.9 °C, HDD : 38.2 °C, plastic enclosure : 30.6 °C	NH, NB, NC, NT, NCD.
Openings(power supply)	Blocked	90	17mins	--	3.13	Type K	T501 primary coil: 89.9 °C, T501 secondary coil: 93.7 °C, T501 core: 72.4 °C, T901 coil: 58.8 °C, T901 core: 58.5 °C, CN1: 52 °C, Z1: 59.7 °C, PWB under BD1: 115.1 °C, PCB near UP1(8459 V3.0): 37 °C, PCB near U1(80572_P V3.0): 46.3 °C, RTC: 43.2 °C, PCB near U1(82133 V1.0): 45.5 °C, PCB near U1(81201 V2.1): 48.2 °C, PCB near	EUT shutdown, due to power supply shutdown, NH, NB, NC, NT, NCD.

IEC 62368-1								
Clause	Requirement + Test					Result - Remark		Verdict
<b>B.3</b>	<b>TABLE: Abnormal operating condition tests</b>						<b>P</b>	
Ambient temperature (°C) .....					22.6		—	
Power source for EUT: Manufacturer, model/type, output rating .....					--		—	
Component No.	Abnormal Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
							CU2(81183 V3.0): 30.7 °C, plastic enclosure inside: 41.8 °C, L pin of socket: 41.5 °C, metal enclosure: 37.4 °C, HDD: 42.4 °C, plastic enclosure: 31 °C	
Fan	Blocked	90	160mins	--	3.14	Type K	T501 primary coil: 77.1 °C, T501 secondary coil: 53.1 °C, T501 core: 60.3 °C, T901 coil: 41.5 °C, T901 core: 40.4 °C, CN1: 38 °C, Z1: 44.6 °C, PWB under BD1: 77.6 °C, PCB near UP1(8459 V3.0): 38.6 °C, PCB near U1(80572_P V3.0): 47.3 °C, RTC: 41.9 °C, PCB near U1(82133 V1.0): 44.8 °C, PCB near U1(81201 V2.1): 48.4 °C, PCB near CU2(81183 V3.0): 30.1 °C, plastic enclosure inside: 42 °C, L pin of socket: 37.5 °C, metal enclosure: 36.8 °C, HDD: 42.7 °C, plastic enclosure: 31.5 °C	NH, NB, NC, NT, NCD.
Fan(power supply)	Blocked	90	12mins	--	3.14	Type K	T501 primary coil: 79 °C, T501 secondary coil: 85.8 °C, T501 core: 63.4 °C, T901 coil: 56.3 °C, T901 core: 55.7 °C, CN1: 48.5 °C, Z1: 55.7 °C, PWB under BD1: 111.2 °C, PCB near UP1(8459 V3.0): 32.1 °C, PCB near	EUT shutdown, due to power supply shutdown, NH, NB, NC, NT, NCD.

IEC 62368-1								
Clause	Requirement + Test					Result - Remark		Verdict
B.3	TABLE: Abnormal operating condition tests							P
Ambient temperature (°C) .....					22.6		—	
Power source for EUT: Manufacturer, model/type, output rating .....					--		—	
Component No.	Abnormal Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
							U1(80572_P V3.0): 41.5 °C, RTC: 35.4 °C, PCB near U1(82133 V1.0): 39 °C, PCB near U1(81201 V2.1): 44.2 °C, PCB near CU2(81183 V3.0): 28 °C, plastic enclosure inside: 37.8 °C, L pin of socket: 37.7 °C, metal enclosure: 33.1 °C, HDD: 35.5 °C, plastic enclosure: 28.7 °C	
USB2.0	OL	90	2h	--	3.12-> 3.14-> 3.15-> 3.11	Type K	T501 primary coil: 77 °C, T501 secondary coil: 53 °C, T501 core: 60.2 °C, T901 coil: 43 °C, T901 core: 41.3 °C, CN1: 37 °C, Z1: 44.7 °C, PWB under BD1: 80.3 °C, PCB near UP1(8459 V3.0): 38.5 °C, PCB near U1(80572_P V3.0): 47.2 °C, RTC: 41.8 °C, PCB near U1(82133 V1.0): 44.5 °C, PCB near U1(81201 V2.1): 48.2 °C, PCB near CU2(81183 V3.0): 37.1 °C, plastic enclosure inside: 41.9 °C, L pin of socket: 37.5 °C, metal enclosure: 36.7 °C, HDD: 42.7 °C, plastic enclosure: 31.4 °C	USB 2.0 load 0.50A-1.50A-2.20A-0A. Temperature was table when output loaded to 2.20A, when increase to 2.21A, USB 2.0 output port shut down immediatel y.. NH, NB, NC, NT, NCD.
USB3.0	OL	90	4h	--	3.12-> 3.13-> 3.14-> 3.10	Type K	T501 primary coil: 74.6 °C, T501 secondary coil: 49.4 °C, T501 core: 57.7 °C, T901 coil: 42 °C, T901 core: 40.6 °C, CN1: 35 °C, Z1: 41.5 °C, PWB under BD1: 79.8 °C, PCB near UP1(8459	USB 3.0 load 0.50A-1.50A-2.20A-0A. Temperature was table when output loaded to 2.20A, when increase to 2.21A, USB 3.0 output port shut

IEC 62368-1								
Clause	Requirement + Test					Result - Remark		Verdict
<b>B.3</b>	<b>TABLE: Abnormal operating condition tests</b>						<b>P</b>	
Ambient temperature (°C) .....					22.6		—	
Power source for EUT: Manufacturer, model/type, output rating .....					--		—	
Component No.	Abnormal Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
							V3.0): 35.9 °C, PCB near U1(80572_P V3.0): 45.2 °C, RTC: 34.8 °C, PCB near U1(82133 V1.0): 41.7 °C, PCB near U1(81201 V2.1): 46.9 °C, PCB near CU2(81183 V3.0): 29.5 °C, plastic enclosure inside: 40.6 °C, L pin of socket: 36 °C, metal enclosure: 34.5 °C, HDD: 40.2 °C, plastic enclosure: 31.2 °C	down immediately.. NH, NB, NC, NT, NCD.
USB2.0	SC	264	10min	--	3.11	Type K	--	USB 2.0 No output during SC, EUT normal operation. NH, NB, NCD, NT, NC.
USB3.0	SC	264	10min	--	3.10	Type K	--	USB 3.0 No output during SC, EUT normal operation. NH, NB, NCD, NT, NC.
Supplementary information:								
<p>1. Test table is provided to record abnormal and fault conditions for all applicable energy sources including Thermal burn injury. Column "Abnormal/Fault." Specify if test condition by indicating "Abnormal" then the condition for a Clause B.3 test or "Single Fault" then the condition for Clause B.4.</p> <p>2. NH = No hazard; NB = No indication of dielectric breakdown; NC = Cheesecloth remained intact; NT = Tissue paper remained intact; NCD = No components damage.</p> <p>Tested on model DS-7632NXI-I2/16P/VPro.</p> <p>Test with power supply DPS-280AB-4 A.</p>								

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

<b>B.4</b>	<b>TABLE: Fault condition tests</b>							<b>P</b>
Ambient temperature (°C) .....					23.1			—
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
Q44 pin 1-2	SC	264	10min	--	0.03	--	--	EUT shut down immediately. NT, NB, NC, NT, NCD.
UV4 pin 1-6	SC	264	10min	--	0.02	--	--	EUT shut down immediately. NT, NB, NC, NT, NCD.
CV108	SC	264	10min	--	0.06	--	--	EUT shut down immediately. NT, NB, NC, NT, NCD.
DN2 pin 2-3	SC	264	10min	--	0.02	--	--	EUT shut down immediately. NT, NB, NC, NT, NCD.
Supplementary information:								
The most unfavourable test condition was performed In fault column, where SC = short-circuited. NH = No hazard; NB = No indication of dielectric breakdown; NC = Cheesecloth remained intact; NT = Tissue paper remained intact; NCD = No components damage. Tested on model DS-7632NXI-I2/16P/VPro.								

Annex M.3	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? ..... :							See below		P
	Non-rechargeable batteries			Rechargeable batteries					
	Discharging		Un-intentional charging	Charging		Discharging		Reversed charging	
	Meas. current	Manuf. Specs.		Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.
Max. current during normal condition <sup>1)</sup>	0.004 mA	10mA	--	--	--	--	--	--	--
Max. current during fault condition <sup>1)</sup>	4.5mA (DN2 PIN1-3 SC)	10mA	5.3mA (CA2 SC)	--	--	--	--	--	--
Test results:								Verdict	
- Chemical leaks						No chemical leaks		P	
- Explosion of the battery						No explosion		P	



IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
- Emission of flame or expulsion of molten metal		No emission of flame or expulsion of molten metal	P
- Electric strength tests of equipment after completion of tests		--	N/A
Supplementary information:			
1) GUANGZHOU TIANQIU ENTERPRISE CO LTD / CR2032			

Q.1	TABLE: Circuits intended for interconnection with building wiring (LPS)							P
Output Circuit	Condition	U <sub>oc</sub> (V)	Time (s)	I <sub>sc</sub> (A)		S (VA)		
				Meas.	Limit	Meas.	Limit	
USB2.0	normal	5.1	5	2.2	8	9.2	100	
USB3.0	normal	5.1	5	2.2	8	9.9	100	
PoE	normal	52.1	60	0.6	19.2	28.4	250	
PoE	QL1M1 PIN1-4 SC	52.1	60	1.4	19.2	67.7	250	
VGA	normal	0	5	0	8	0	100	
AUDIO	normal	0	5	0	8	0	100	
HDMI	normal	4.9	5	0	8	0	100	
LAN	normal	0	5	0	8	0	100	
Supplementary Information:								
eFuse IC/ PTC are certified and limited USB output.								
PTC are certified and limited HDMI port.								
Tested on model DS-7632NXI-I2/16P/VPro.								
Tested on mainboard DS-80572-P V3.0.								

**List of test equipment used:**

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

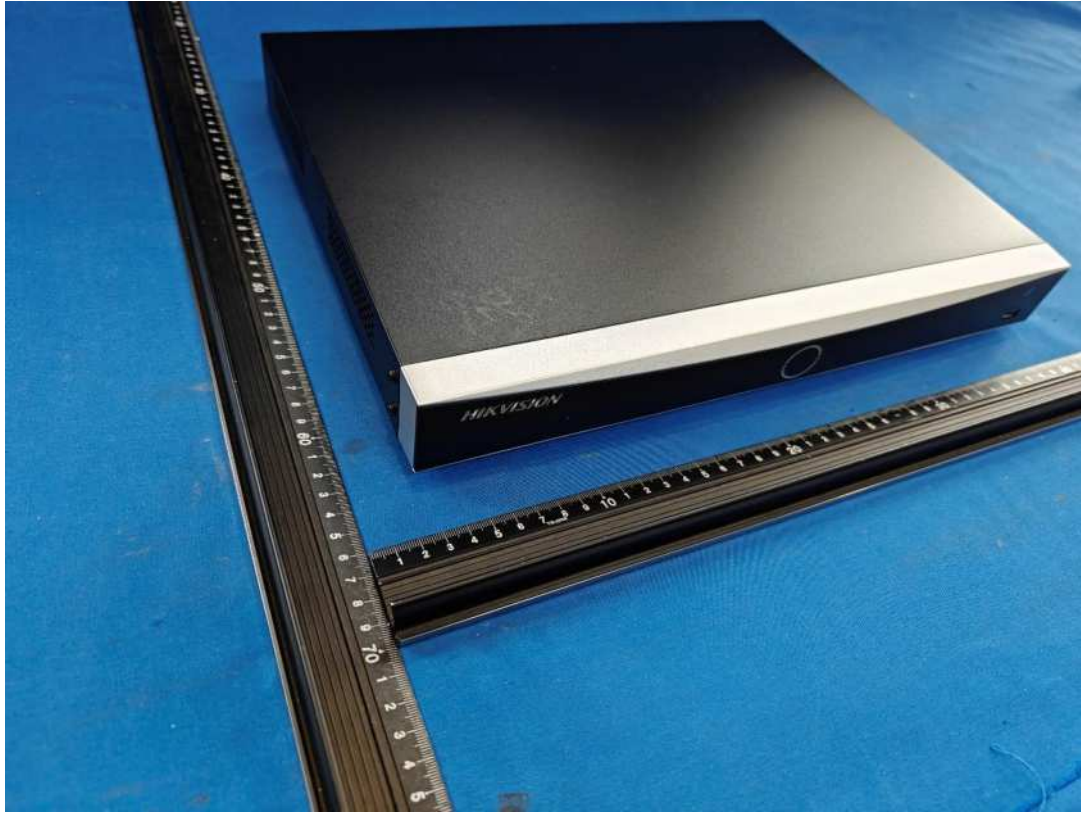
Instr. Code	Instrument Name	Instrument Type	Instrument I.D.	Series No.	Calibration Date	
					Last	Due
1	Power meter	WT310	hkvs-yq1524	C2QB04042V	05/22/2025	05/21/2026
2	Data Acquisition	Agilent 34972A	hkvs-yq1192	MY49012334	02/12/2025	02/11/2026
3	DC power	Chroma 62006P-300-8	hkvs-qt4267	62006PE00520	02/12/2025	02/11/2026
4	Electronic stopwatch	PC396	hkvs-sys1001	--	12/29/2024	12/28/2025
5	Thermometer and hygrometer	BY-2003P	hkvs-clsb180166A	--	7/12/2024	7/11/2025
6	Electronic balance	JWI-2100	8100-0203- 220235A	--	10/12/2024	9/12/2025

-- End of main test report --

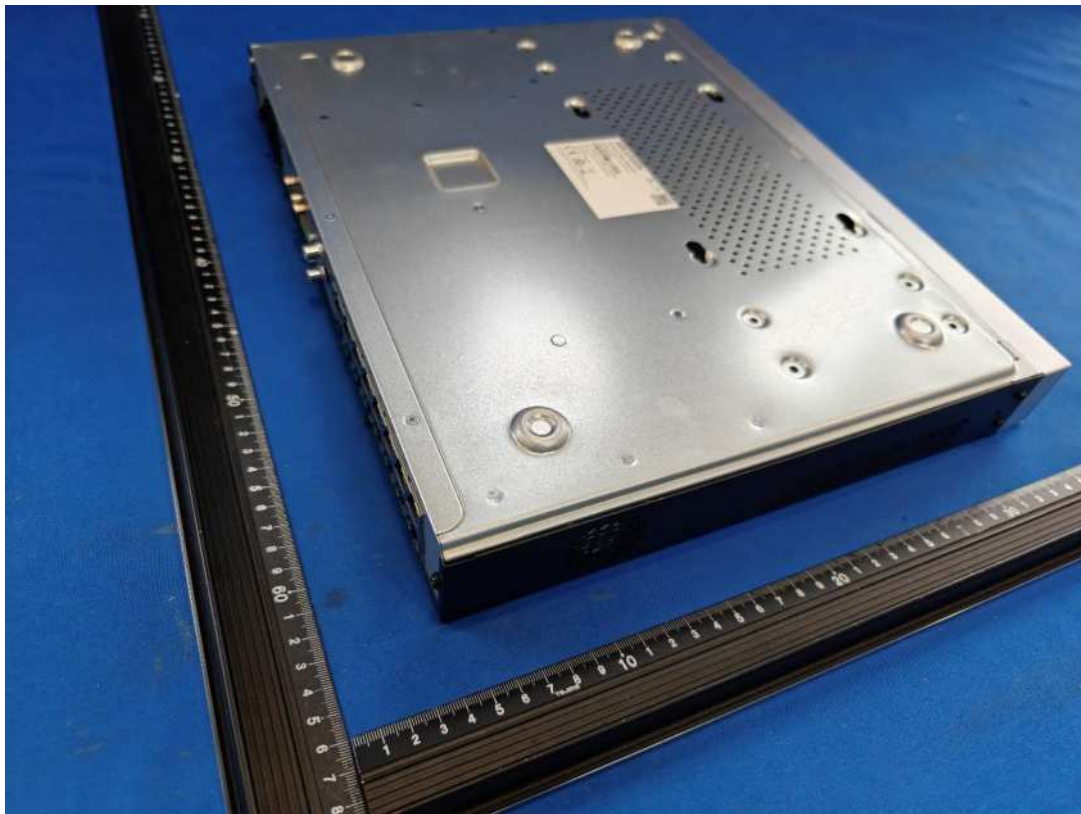
## ATTACHMENT      Photo Documentation

Report No.: CN24QVA3 003

Type Designation: See test report



Picture 1 – Overall view



Picture 2 – Overall view

## ATTACHMENT      Photo Documentation

Report No.:          CN24QVA3 003

Type Designation:   See test report



Picture 3 – Overall view



Picture 4 – Overall view



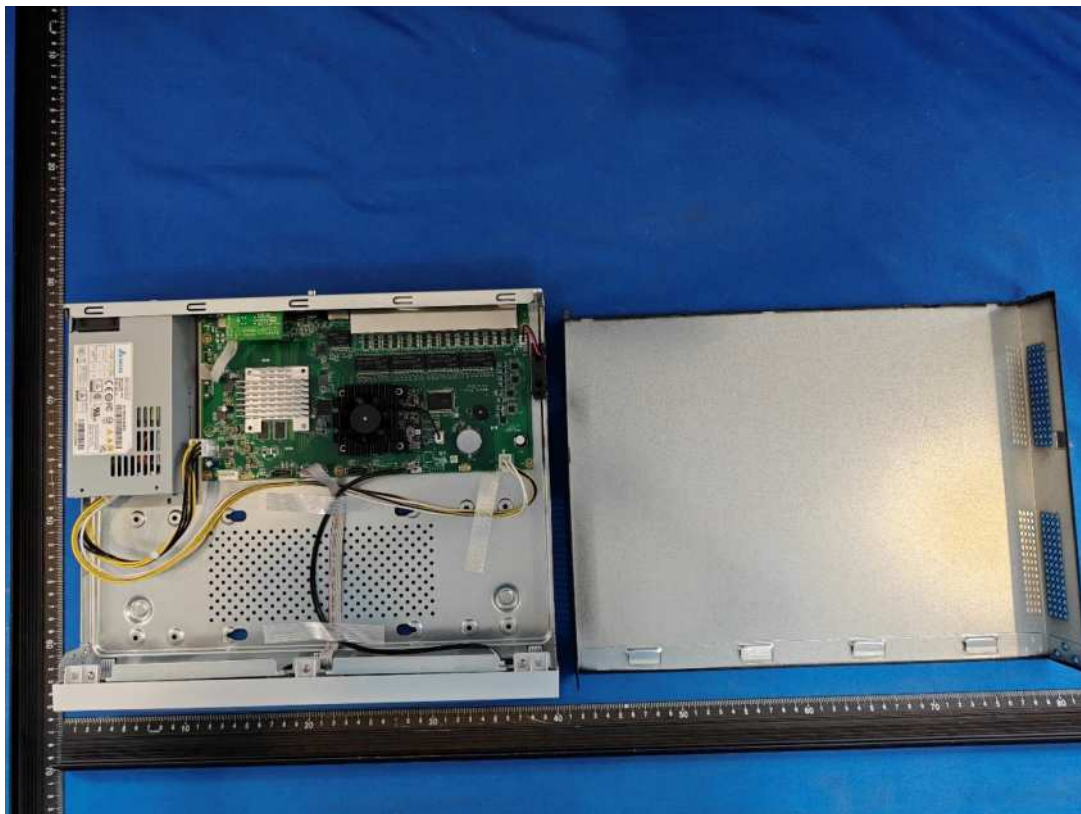
## ATTACHMENT Photo Documentation

Report No.: CN24QVA3 003

Type Designation: See test report



Picture 5 – Overall view

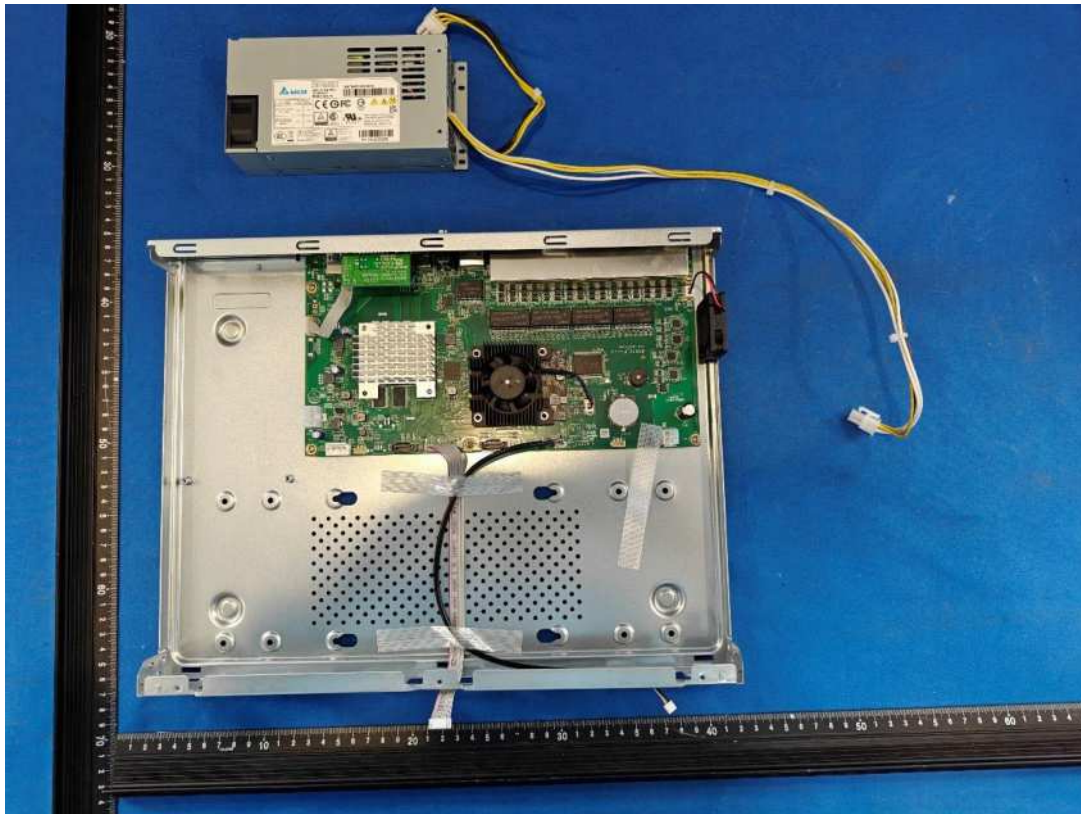


Picture 6 – Internal view

## ATTACHMENT Photo Documentation

Report No.: CN24QVA3 003

Type Designation: See test report



Picture 7 – Internal view



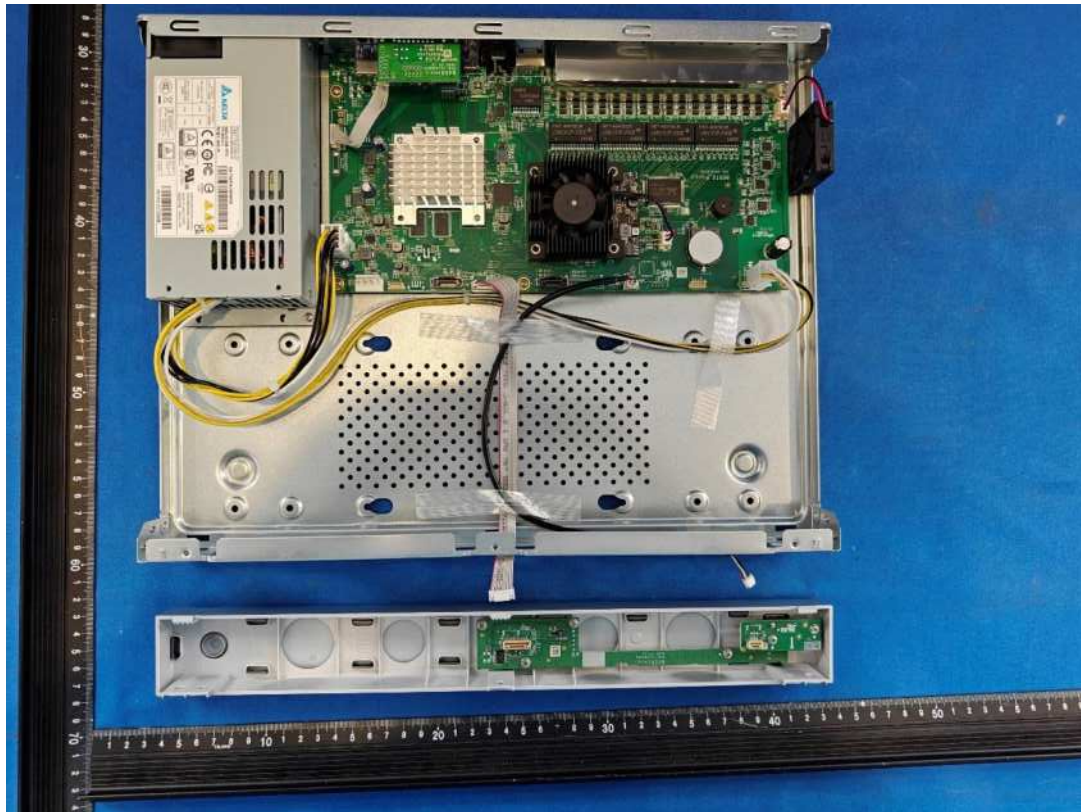
Picture 8 – Internal view



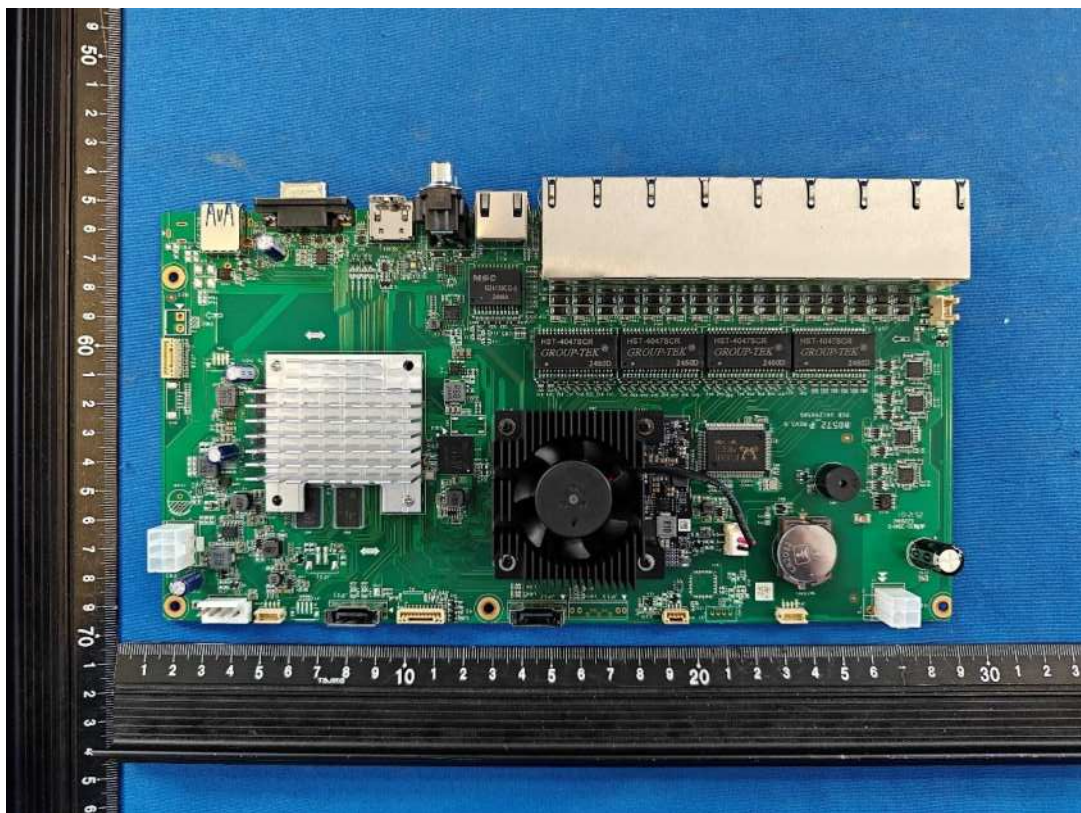
## ATTACHMENT Photo Documentation

Report No.: CN24QVA3 003

Type Designation: See test report



Picture 9 – Internal view



Picture 10 – Add Main board module view (Model: DS-80572-P V3.0)



## ATTACHMENT Photo Documentation

Report No.: CN24QVA3 003

Type Designation: See test report



Picture 11 – Add Main board module view (Model: DS-80572-P V3.0)



Picture 12 – Add Main board module view (Model: DS-80572-P V3.0)

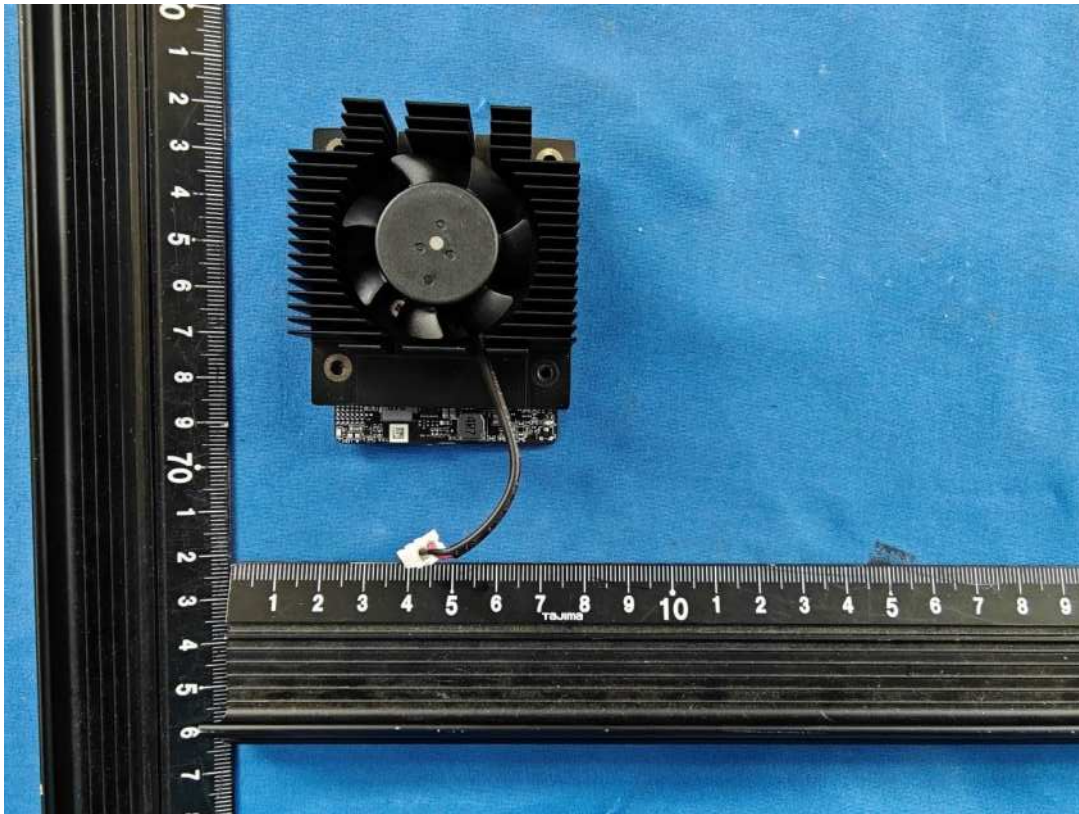


## ATTACHMENT

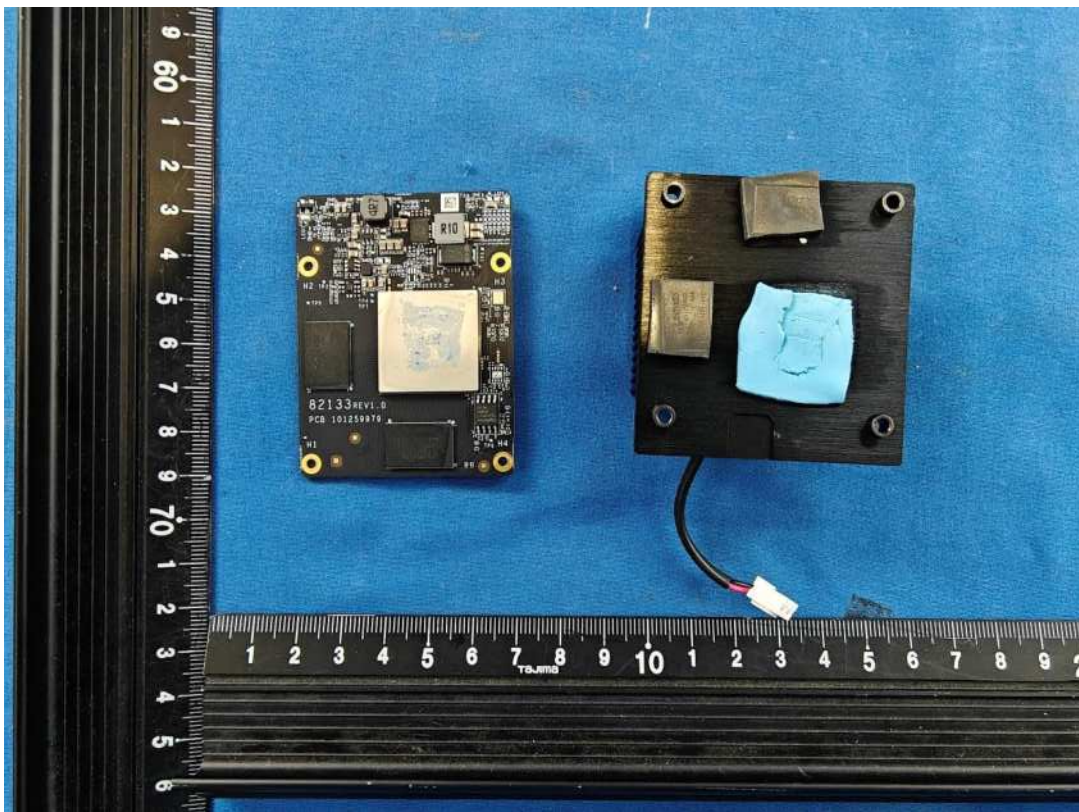
## Photo Documentation

Report No.: CN24QVA3 003

Type Designation: See test report



Picture 13 – Add Main board module view (Model: DS-80572-P V3.0)



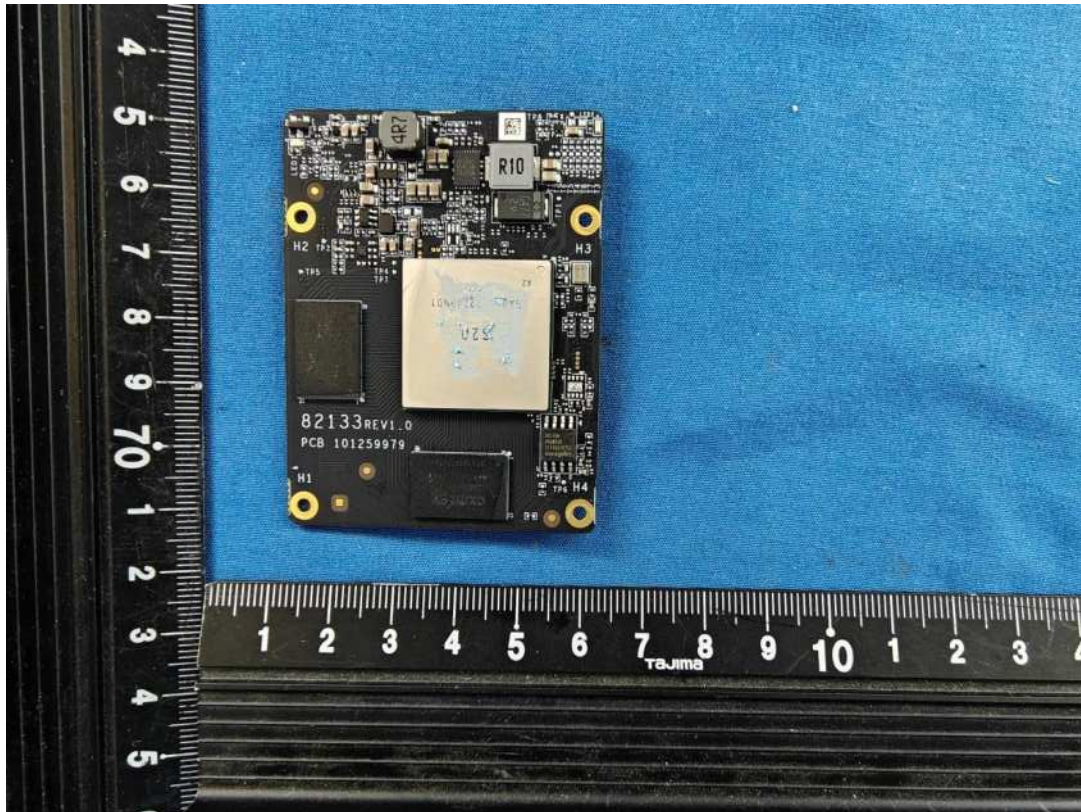
Picture 14 – Add Main board module view (Model: DS-80572-P V3.0)



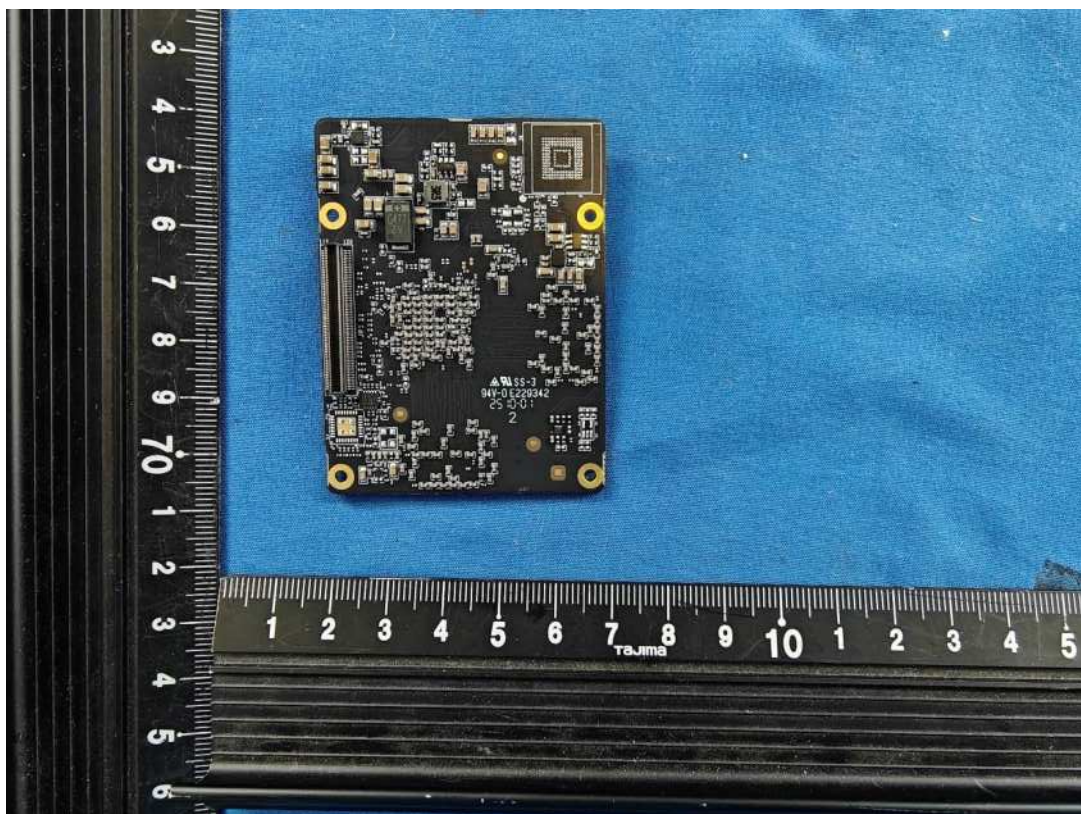
## ATTACHMENT Photo Documentation

Report No.: CN24QVA3 003

Type Designation: See test report



Picture 15 – Add Main board module view (Model: DS-80572-P V3.0)



Picture 16 – Add Main board module view (Model: DS-80572-P V3.0)



## ATTACHMENT Photo Documentation

Report No.: CN24QVA3 003

Type Designation: See test report



Picture 17 – Add Front plastic cover Internal view

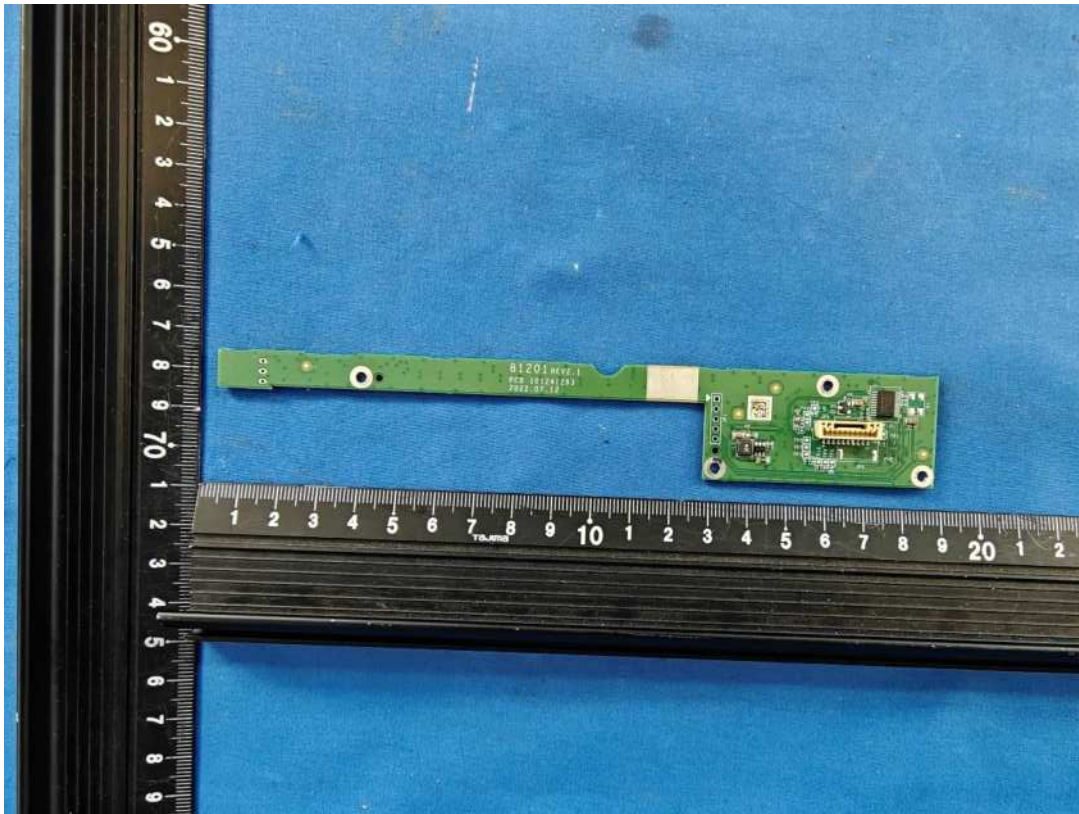


Picture 18 – Add Front plastic cover Internal view

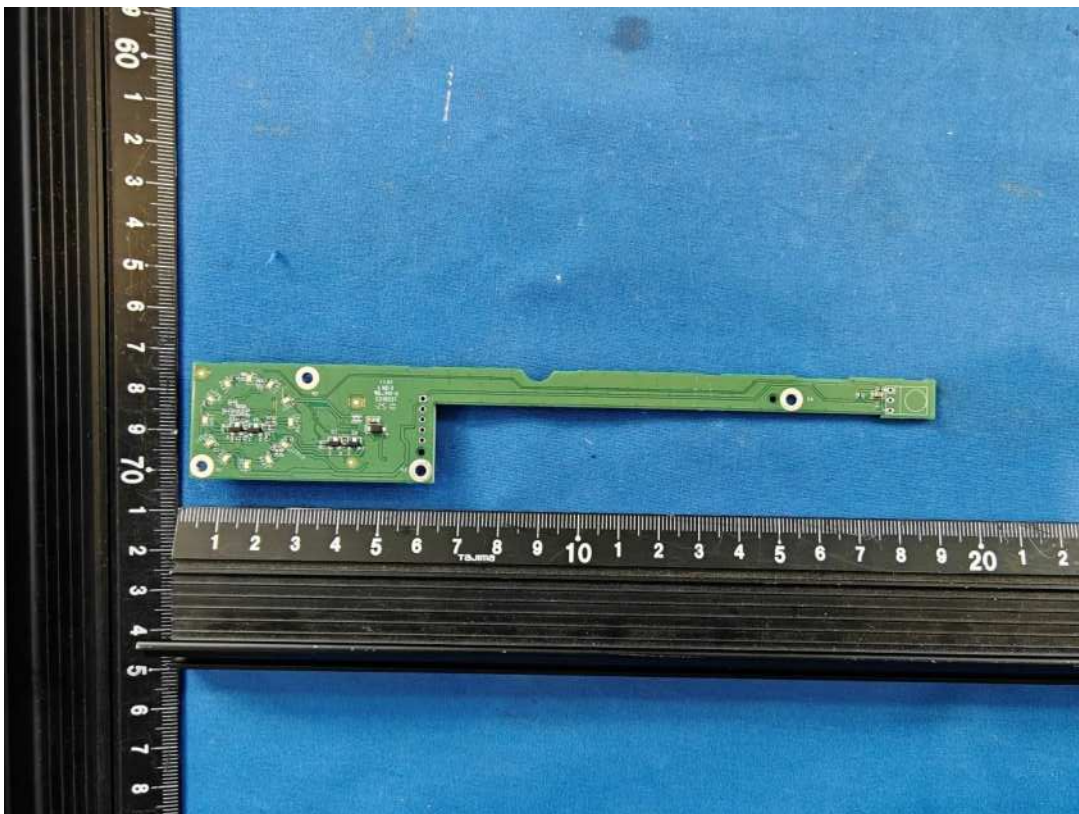
## ATTACHMENT Photo Documentation

Report No.: CN24QVA3 003

Type Designation: See test report



Picture 19 – Front plastic cover PCB view



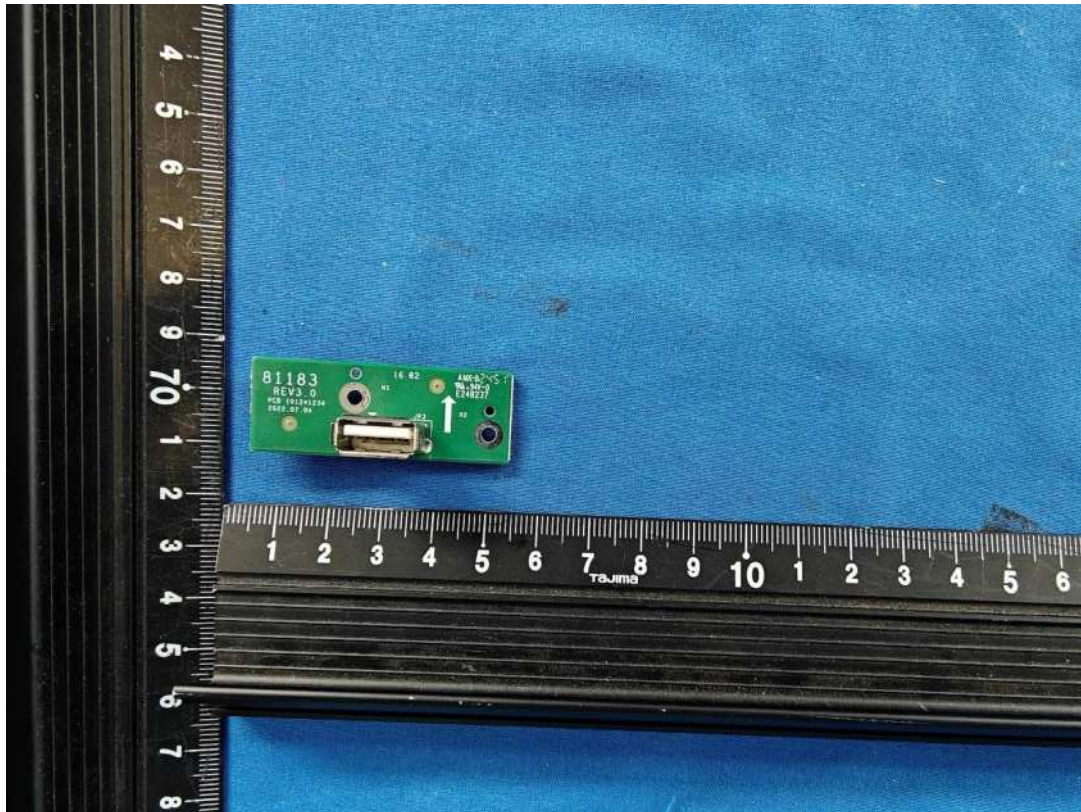
Picture 20 – Front plastic cover PCB view



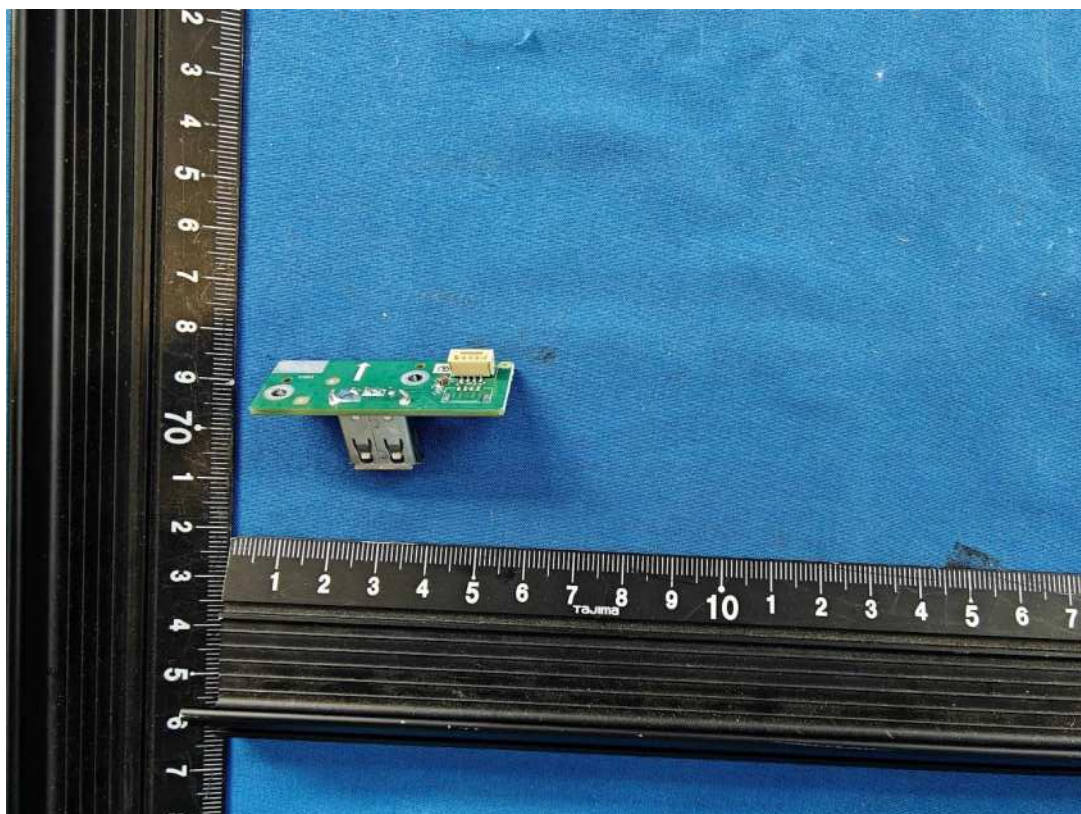
## ATTACHMENT Photo Documentation

Report No.: CN24QVA3 003

Type Designation: See test report



Picture 21 – Front plastic cover PCB view



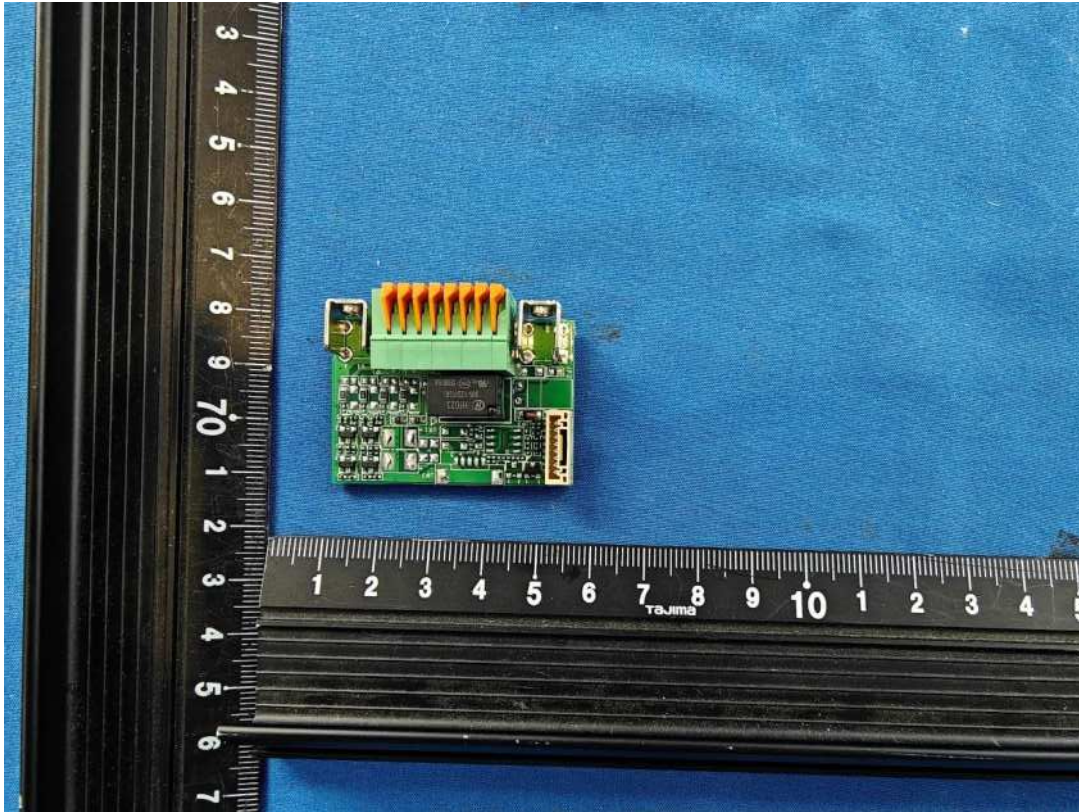
Picture 22 – Front plastic cover PCB view



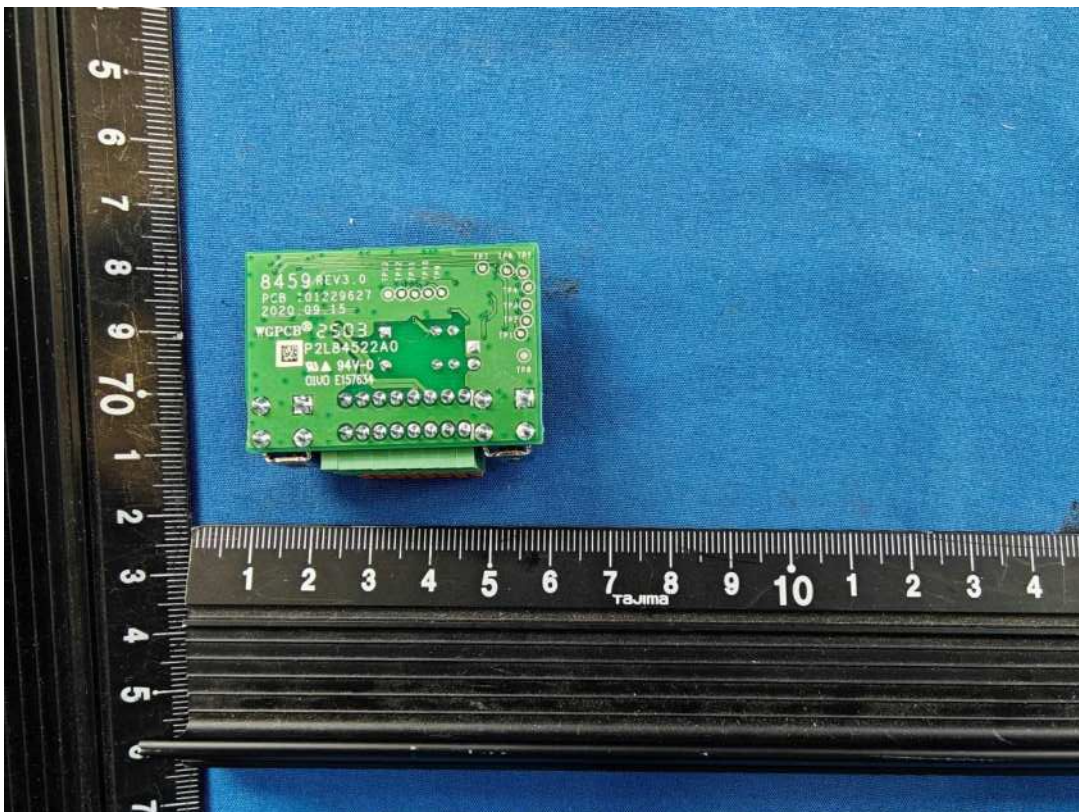
## ATTACHMENT Photo Documentation

Report No.: CN24QVA3 003

Type Designation: See test report



Picture 23 – PCB view



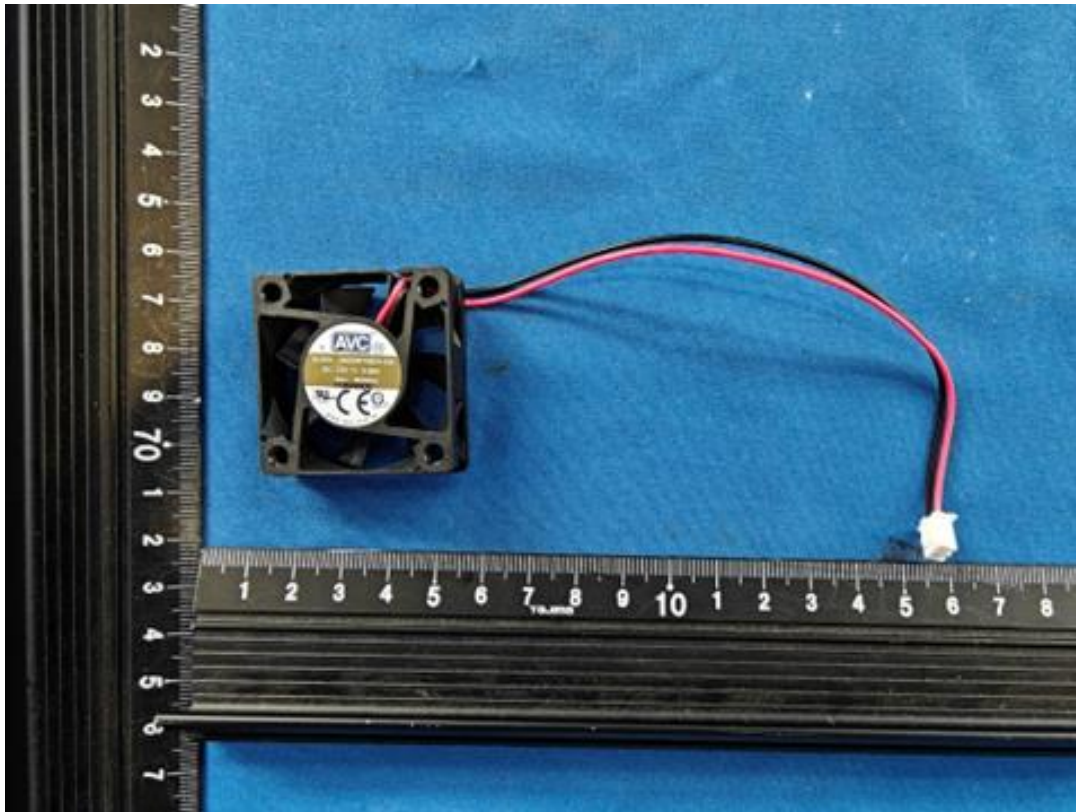
Picture 24 –PCB view



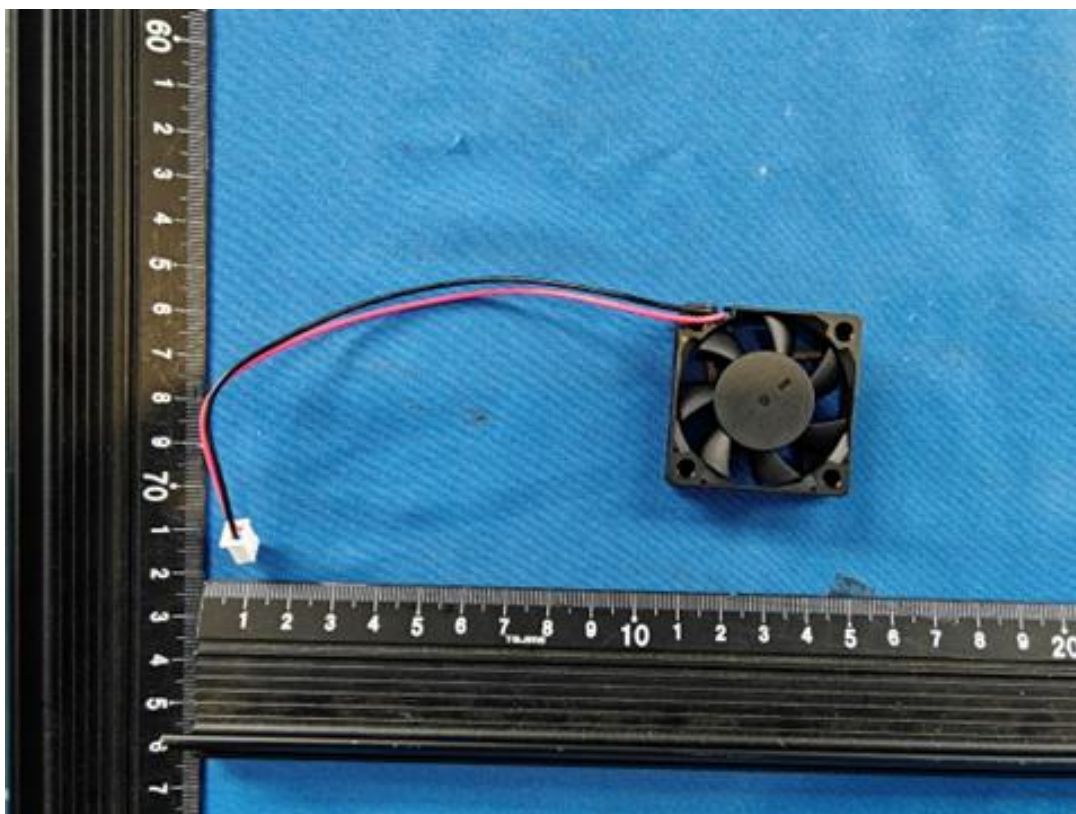
## ATTACHMENT Photo Documentation

Report No.: CN24QVA3 003

Type Designation: See test report



Picture 25 – Add Fan view (model: DAZA0410B2H-024)



Picture 26 – Add Fan view (model: DAZA0410B2H-024)



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** ..... : CN24QVA3 002  
**Date of issue** ..... : 2025-01-15  
**Total number of pages** ..... : 17 (excluding attachments, refer to page 5)

**Name of Testing Laboratory  
preparing the Report** ..... : TÜV Rheinland (Shanghai) Co., Ltd.

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

**Address** ..... : No. 555 Qianmo Road, Binjiang District, Hangzhou, 310052 Zhejiang, P.R.  
China

#### Test specification:

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

**Test procedure** ..... : CB Scheme

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

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

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

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

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

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

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<b>Test Item description .....</b>	Network Video Recorder
<b>Trade Mark(s) .....</b>	HIKVISION
<b>Manufacturer .....</b>	Same as applicant
<b>Model/Type reference .....</b>	DS-7616NI-Q2/16P, DS-7616NI-Q2/16PUHK, DS-7616NI-Q2/16PCKV, DS-7616NI-Q2/16PUVS, DS-7616NI-Q2/16PKVO, DS-7616NI-Q2/16PHUN, NVR-216MH-C/16P, NVR-216MH-C/16PUHK, NVR-216MH-C/16PCKV, NVR-216MH-C/16PUVS, NVR-216MH-C/16PKVO, NVR-216MH-C/16PHUN, HWN-4216MH-16P, HWN-4216MH-16PUHK, HWN-4216MH-16PCKV, HWN-4216MH-16PUVS, HWN-4216MH-16PKVO, HWN-4216MH-16PHUN, ERI-K216-P16, DS-7616NI-K2/16P, DS-7616NI-K2/16PUHK, DS-7616NI-K2/16PCKV, DS-7616NI-K2/16PUVS, DS-7616NI-K2/16PKVO, DS-7616NI-K2/16PHUN, DS-7632NI-K2/16P, DS-7632NI-K2/16PUHK, DS-7632NI-K2/16PCKV, DS-7632NI-K2/16PUVS, DS-7632NI-K2/16PKVO, DS-7632NI-K2/16PHUN, DS-7616NI-M2/16P, DS-7616NI-M2/16PUHK, DS-7616NI-M2/16PCKV, DS-7616NI-M2/16PUVS, DS-7616NI-M2/16PKVO, DS-7616NI-M2/16PHUN, DS-7616NI-M2/16P/EDU, DS-7616NI-M2/16P/RTL, DS-7616NI-M2/16P/NRG, DS-7616NI-M2/16P/LGX, DS-7616NI-M2/16P/MFG, DS-7616NI-M2/16P/RMS, DS-7616NXI-K2/16P, DS-7616NXI-K2/16PUHK, DS-7616NXI-K2/16PCKV, DS-7616NXI-K2/16PUVS, DS-7616NXI-K2/16PKVO, DS-7616NXI-K2/16PHUN, DS-7632NXI-K2/16P, DS-7632NXI-K2/16PUHK, DS-7632NXI-K2/16PCKV, DS-7632NXI-K2/16PUVS, DS-7632NXI-K2/16PKVO, DS-7632NXI-K2/16PHUN, DS-7816NXI-K2/16P, DS-7816NXI-K2/16PUHK, DS-7816NXI-K2/16PCKV, DS-7816NXI-K2/16PUVS, DS-7816NXI-K2/16PKVO, DS-7816NXI-K2/16PHUN, DS-7832NXI-K2/16P, DS-7832NXI-K2/16PUHK, DS-7832NXI-K2/16PCKV, DS-7832NXI-K2/16PUVS, DS-7832NXI-K2/16PKVO, DS-7832NXI-K2/16PHUN, DS-7616NI-K2/16P/4G, DS-7616NI-K2/16P/4GUHK, DS-7616NI-K2/16P/4GCKV, DS-7616NI-K2/16P/4GUVS, DS-7616NI-K2/16P/4GHUN, DS-7616NI-K2/16P/4GKVO, iDS-7616NXI-M2/16P/X, iDS-7616NXI-M2/16P/XUHK, iDS-7616NXI-M2/16P/XCKV, iDS-7616NXI-M2/16P/XUVS, iDS-7616NXI-M2/16P/XKVO, iDS-7616NXI-M2/16P/XHUN, iDS-7616NXI-M2/16P/X/EDU, iDS-7616NXI-M2/16P/X/RTL, iDS-7616NXI-M2/16P/X/NRG, iDS-7616NXI-M2/16P/X/LGX, iDS-7616NXI-M2/16P/X/MFG, iDS-7616NXI-M2/16P/X/RMS, DS-7616NI-I2/16P, DS-7616NI-I2/16P(D), DS-7616NI-I2/16PUHK, DS-7616NI-I2/16PCKV, DS-7616NI-I2/16PUVS, DS-7616NI-I2/16PKVO, DS-7616NI-I2/16PHUN, DS-7632N-I2/16P, DS-7632N-I2/16PUHK, DS-7632N-I2/16PCKV, DS-7632N-I2/16PUVS, DS-7632N-I2/16PKVO, DS-7632N-I2/16PHUN,

	HWN-5216MH-16P, HWN-5232MH-16P DS-7632NI-I2/16PUHK, DS-7632NI-I2/16PCKV, DS-7632NI-I2/16PUVS, DS-7632NI-I2/16PKVO, DS-7632NI-I2/16PHUN, DS-7616NXI-I2/16P/S, DS-7616NXI-I2/16P/S(E), DS-7616NXI-I2/16P/SUHK, DS-7616NXI-I2/16P/SCKV, DS-7616NXI-I2/16P/SUVS, DS-7616NXI-I2/16P/SHUN, DS-7616NXI-I2/16P/SKVO, DS-7616NXI-I2/16P/S/EDU, DS-7616NXI-I2/16P/S/RTL, DS-7616NXI-I2/16P/S/NRG, DS-7616NXI-I2/16P/S/LGX, DS-7616NXI-I2/16P/S/MFG, DS-7616NXI-I2/16P/S/RMS, DS-7632NXI-I2/16P/S, DS-7632NXI-I2/16P/SUHK, DS-7632NXI-I2/16P/SCKV, DS-7632NXI-I2/16P/SUVS, DS-7632NXI-I2/16P/SHUN, DS-7632NXI-I2/16P/SKVO, DS-7632NXI-I2/16P/S/EDU, DS-7632NXI-I2/16P/S/RTL, DS-7632NXI-I2/16P/S/NRG, DS-7632NXI-I2/16P/S/LGX, DS-7632NXI-I2/16P/S/MFG, DS-7632NXI-I2/16P/S/RMS, DS-7616NXI-M2/16P/VPro, DS-7616NXI-M2/16P/VProUHK, DS-7616NXI-M2/16P/VProCKV, DS-7616NXI-M2/16P/VProUVS, DS-7616NXI-M2/16P/VProKVO, DS-7616NXI-M2/16P/VProHUN, DS-7616NXI-M2/16P/VPro/EDU, DS-7616NXI-M2/16P/VPro/RTL, DS-7616NXI-M2/16P/VPro/NRG, DS-7616NXI-M2/16P/VPro/LGX, DS-7616NXI-M2/16P/VPro/MFG, DS-7616NXI-M2/22P/VPro/RMS, DS-7616NXI-K2/16P(D), NVR-216MH-K/16P, DS-7632NXI-K2/16P(D), NVR-232MH-K/16P, DS-7916NXI-K2/16P, DS-XXXXXXXXXX, NVR-XXXXXXXXXX ("X"="A-Z", "a-z", "0-9", "-", "/", or blank)
<b>Ratings</b> .....	Input: 100-240V~, 50/60Hz, 3.2A Max Output: 44-57V--- 0.6A Max. (Each PoE)

<b>Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):</b>		
<input type="checkbox"/>	<b>CB Testing Laboratory:</b>	TÜV Rheinland (Shanghai) Co., Ltd.
<b>Testing location/ address .....</b>		No.177, 178, Lane 777 West Guangzhong Road, Jing'an District, Shanghai, China c/o TÜV Rheinland Suzhou Co., Ltd. Pingqian (Taicang) Modern Industrial Park, No.525, Yuewang Lingang South Road, Shaxi Town, Taicang City, Jiangsu Province, China
<b>Tested by (name, function, signature) .....</b>		
<b>Approved by (name, function, signature) .....</b>		
<input type="checkbox"/>	<b>Testing procedure: CTF Stage 1:</b>	N/A
<b>Testing location/ address .....</b>		
<b>Tested by (name, function, signature) .....</b>		
<b>Approved by (name, function, signature) .....</b>		
<input checked="" type="checkbox"/>	<b>Testing procedure: CTF Stage 2:</b>	Hangzhou Hikvision Digital Technology Co., Ltd. Test Center
<b>Testing location/ address .....</b>		No. 518 Wulianwang Street, Binjiang District Hangzhou 310052 Zhejiang China
<b>Tested by (name, function, signature) .....</b>		Han Wang / Test engineer <i>Han Wang</i>
<b>Witnessed by (name, function, signature) .....</b>		Kevin Gao / Project engineer <i>Kevin Gao</i>
<b>Approved by (name, function, signature) .....</b>		Ben Cao / Technical Expert <i>Ben</i>
<input type="checkbox"/>	<b>Testing procedure: CTF Stage 3:</b>	N/A
<input type="checkbox"/>	<b>Testing procedure: CTF Stage 4:</b>	N/A
<b>Testing location/ address .....</b>		
<b>Tested by (name, function, signature) .....</b>		
<b>Witnessed by (name, function, signature) .....</b>		
<b>Approved by (name, function, signature) .....</b>		
<b>Supervised by (name, function, signature) .....</b>		

<b>List of Attachments (including a total number of pages in each attachment):</b> ATTACHMENT – Photo Documentation (2 pages) Note: Total number of pages in each attachment is indicated in individual attachment.	
<b>Summary of testing:</b>	
<b>Tests performed (name of test and test clause):</b> <ul style="list-style-type: none"> <li>All applicable tests as described in Test Case and Measurement Sections were performed on model DS-7616NXI-K2/16P add differential testing to model DS-7616NI-K2/16P. See measurement section for details.</li> <li>The test samples are pre-production samples without serial numbers.</li> <li>The manufacturer specified maximum operating temperature is 55°C.</li> </ul>	<b>Testing location:</b> Hangzhou Hikvision Digital Technology Co., Ltd. Test Center No.518 Wulianwang Street, Binjiang District Hangzhou 310052 Zhejiang China
<b>Summary of compliance with National Differences (List of countries addressed):</b> EU Group Differences, EU Special National Conditions, CA, JP, US, DK, IT, AU, NZ.  Explanation of used codes: CA=Canada, JP=Japan, US=United States of America, DK= Denmark, IT=Italy, AU= Australia, NZ= New Zealand.  <b>Other national requirements request by applicant:</b> Argentina**, Bahrain**, Belarus**, Belgium**/*; Brazil**, Bulgaria**/*; China**, Colombia**; Croatia**, Czech Republic**/*; Finland**/*; France**/*; Germany**/*; Greece**/*; Hungary**/*; India**, Indonesia**, Ireland**/*; Israel; Kenya**, Korea**, Libya**, Malaysia**, Mexico**, Netherlands Antilles**/*, Nigeria**, Norway**/*; Pakistan**, Poland**/*; Portugal**/*; Russian Federation**, Romania**/*; Saudi Arabia**, Serbia; Singapore**, Slovakia**/*; Slovenia**/*; South Africa**, Spain**/*; Sweden*; Switzerland**/*; Thailand**, Turkey**/*; Ukraine**, United Arab Emirates**, United Kingdom*; Vietnam** Note(s): Countries outside the CB Scheme membership may also accept this report. * Only applicable for Group Differences (if any). ** No National Differences Declared	
<input checked="" type="checkbox"/> <b>The product fulfils the requirements of</b> - IEC 62368-1:2014 - EN 62368-1:2014+A11:2017 The corresponding national differences refer to previous report CN21JAUJ 001~ 004.	
<b>Use of uncertainty of measurement for decisions on conformity (decision rule) :</b> <input checked="" type="checkbox"/> No decision rule is specified by the IEC standard, when comparing the measurement result with the applicable limit according to the specification in that standard. The decisions on conformity are made without applying the measurement uncertainty ("simple acceptance" decision rule, previously known as "accuracy method").  <input type="checkbox"/> Other:... (to be specified, for example when required by the standard or client, or if national accreditation requirements apply)	
<b>Information on uncertainty of measurement:</b> The uncertainties of measurement are calculated by the laboratory based on application of criteria given by OD-5014 for test equipment and application of test methods, decision sheets and operational procedures of IECEE. IEC Guide 115 provides guidance on the application of measurement uncertainty principles and applying the decision rule when reporting test results within IECEE scheme, noting that the reporting of the measurement uncertainty for measurements is not necessary unless required by the test standard or customer. Calculations leading to the reported values are on file with the NCB and testing laboratory that conducted the testing.	

**Copy of marking plate:**

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

## &lt;Representative&gt;

iDS-7616NXI-M2/16P/X  
Q12345678 21605528

SN: Q12345678

Quantity: 1  
Date: 08/2022  
2008021825/30

**HDMI™**

**UK CA CE**  
Scan to Download App

**Lot No.: 21605528**  
**Material Code: 303617217**

**UK CE**  
Hik-Connect

**Q12345678**

**HIKVISION**  
**Network Video Recorder**  
Model: iDS-7616NXI-M2/16P/X  
SN: C12345678

6 954273 650940

**Q12345678**

**Q12345678**

**HIKVISION**  
**Network Video Recorder**  
Model: iDS-7616NXI-M2/16P/X  
SN: Q12345678

I/P: 100-240V~, 50/60Hz, 3.2A MAX  
O/P: Each PoE44-57V=0.6A MAX  
CAN ICES-3(A)/NMB-3(A) IC:xxxxxx-xxxxxxxxxx  
Made in China FCC ID:2ADTD-xxxxxxxxxx

This device complies with Part 15 of the FCC Rules.  
Operation is subject to the following two conditions:  
(1) this device may not cause harmful interference, and  
(2) this device must accept any interference received,  
including interference that may cause undesired operation.  
Manufacturer: Hangzhou Hikvision Digital Technology Co., Ltd.  
Address: No.555 Qianmo Road, Binjiang District, Hangzhou 310052, China

**Q12345678**

**Note:**

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

TEST ITEM PARTICULARS:	
Classification of use by..... :	<input checked="" type="checkbox"/> Ordinary person <input type="checkbox"/> Instructed person <input type="checkbox"/> Skilled person <input type="checkbox"/> Children likely to be present
Supply Connection..... :	<input checked="" type="checkbox"/> AC Mains <input type="checkbox"/> DC Mains <input type="checkbox"/> External Circuit - not Mains connected - <input type="checkbox"/> ES1 <input type="checkbox"/> ES2 <input type="checkbox"/> ES3
Supply % Tolerance ..... :	<input checked="" type="checkbox"/> +10%/-10% <input type="checkbox"/> +20%/-15% <input type="checkbox"/> +____%/ -____% <input type="checkbox"/> None
Supply Connection – Type ..... :	<input checked="" type="checkbox"/> pluggable equipment type A - <input type="checkbox"/> non-detachable supply cord <input checked="" type="checkbox"/> appliance coupler <input type="checkbox"/> direct plug-in <input type="checkbox"/> mating connector <input type="checkbox"/> pluggable equipment type B - <input type="checkbox"/> non-detachable supply cord <input type="checkbox"/> appliance coupler <input type="checkbox"/> permanent connection <input type="checkbox"/> mating connector <input type="checkbox"/> other:
Considered current rating of protective device as part of building or equipment installation ..... :	16A (20A for US/CA); Installation location: <input checked="" type="checkbox"/> building; <input type="checkbox"/> equipment
Equipment mobility..... :	<input checked="" type="checkbox"/> movable <input type="checkbox"/> hand-held <input type="checkbox"/> transportable <input type="checkbox"/> stationary <input type="checkbox"/> for building-in <input type="checkbox"/> direct plug-in <input type="checkbox"/> rack-mounting <input type="checkbox"/> wall-mounted
Over voltage category (OVC) ..... :	<input type="checkbox"/> OVC I <input checked="" type="checkbox"/> OVC II <input type="checkbox"/> OVC III <input type="checkbox"/> OVC IV <input type="checkbox"/> other:
Class of equipment ..... :	<input checked="" type="checkbox"/> Class I <input type="checkbox"/> Class II <input type="checkbox"/> Class III <input type="checkbox"/> Class II with functional earthing <input type="checkbox"/> Not classified
Access location ..... :	<input type="checkbox"/> restricted access area <input checked="" type="checkbox"/> N/A
Pollution degree (PD) ..... :	<input type="checkbox"/> PD 1 <input checked="" type="checkbox"/> PD 2 <input type="checkbox"/> PD 3
Manufacturer's specified maxium operating ambient ..... :	55 °C
IP protection class ..... :	<input checked="" type="checkbox"/> IPX0 <input type="checkbox"/> IP____
Power Systems ..... :	<input checked="" type="checkbox"/> TN <input type="checkbox"/> TT <input type="checkbox"/> IT - ____ V <sub>L-L</sub> ; <input type="checkbox"/> dc mains <input type="checkbox"/> N/A
Altitude during operation (m) ..... :	<input type="checkbox"/> 2000 m or less <input checked="" type="checkbox"/> ≤ 5000 m
Altitude of test laboratory (m) ..... :	<input checked="" type="checkbox"/> 2000 m or less <input type="checkbox"/> ____ m
Mass of equipment (kg) ..... :	<input checked="" type="checkbox"/> Approx. 2.78 Kg

<b>Possible test case verdicts:</b>	
- test case does not apply to the test object ..... : N/A	
- test object does meet the requirement ..... : P (Pass)	
- test object does not meet the requirement ..... : F (Fail)	
<b>Testing</b> ..... :	
<b>Date of receipt of test item</b> ..... : 2024-12-31	
<b>Date (s) of performance of tests</b> ..... : 2024-12-31 to 2025-01-02	
<b>General remarks:</b>	
"(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report.	
Throughout this report a <input type="checkbox"/> comma / <input checked="" type="checkbox"/> point is used as the decimal separator.	
<b>Manufacturer's Declaration per sub-clause 4.2.5 of IEC60068-2-1:</b>	
The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided ..... :	<input checked="" type="checkbox"/> <b>Yes</b> <input type="checkbox"/> <b>Not applicable</b>
<b>When differences exist; they shall be identified in the General product information section.</b>	
<b>Name and address of factory (ies)</b> .....	1) Hangzhou Hikvision Electronics Co., Ltd. No.299, Qiushi Road, Tonglu Economic Development Zone, Tonglu County, Hangzhou, 311500 Zhejiang, P.R. China  2) Hangzhou Hikvision Technology Co., Ltd. No. 700 Dongliu Road Binjiang District, Hangzhou 310052 Zhejiang P.R. China  3) Chongqing Hikvision Technology Co., Ltd. No. 118, Haikang Road, Area C, Jianqiao Industrial Park, Dadukou District, 401325 Chongqing P.R. China
<b>General product information and other remarks:</b>	
<b>Product Description –</b> Refer to previous report CN24QVA3 001. This report shall be used in conjunction with previous report CN24QVA3 001.	
<b>Description of changes:</b> - Add alternate source of mainboard (Model: DS-80517_P REV2.0) for all models. For above described change, all applicable tests were conducted.	
<b>Model Differences –</b> Refer to previous report CN24QVA3 001.	
<b>History of amendments and modifications:</b> Ref. No. CN24QVA3 001, dated on 2024-12-19 (original test report) Ref. No. CN24QVA3 002, dated on 2025-01-15 (1 <sup>st</sup> modification test report)	

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
<b>5</b>	<b>ELECTRICALLY-CAUSED INJURY</b>		<b>P</b>
5.4	Insulation materials and requirements		P
5.4.1.2	Properties of insulating material	Hygroscopic materials are not used for insulating material.	P
5.4.1.3	Humidity conditioning .....	See sub-clause 5.4.8.	P
5.4.1.4	Maximum operating temperature for insulating materials .....	See appended table 5.4.1.4.	P
<b>6</b>	<b>ELECTRICALLY- CAUSED FIRE</b>		<b>P</b>
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
<b>9</b>	<b>THERMAL BURN INJURY</b>		<b>P</b>
9.2	Thermal energy source classifications	All accessible surfaces are classified as TS1, see appended table 5.4.1.4, 6.3.2, 9.0, B.2.6.	P
9.3	Safeguard against thermal energy sources		P
9.4	Requirements for safeguards		N/A
9.4.1	Equipment safeguard		N/A
9.4.2	Instructional safeguard .....		N/A
<b>B</b>	<b>NORMAL OPERATING CONDITION TESTS, ABNORMAL OPERATING CONDITION TESTS AND SINGLE FAULT CONDITION TESTS</b>		<b>P</b>
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 .....		N/A
B.2.3	Supply voltage and tolerances		N/A
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	Not replaced by ordinary person	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	Compliance.	P



IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
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		N/A
B.4.3.1	Motor blocked or rotor locked increasing the internal ambient temperature .....	(See Clause G.5)	N/A
B.4.4	Short circuit of functional insulation	(See appended table B.4)	P
B.4.4.1	Short circuit of clearances for functional insulation	(See appended table B.4)	P
B.4.4.2	Short circuit of creepage distances for functional insulation		P
B.4.4.3	Short circuit of functional insulation on coated printed boards		N/A
B.4.5	Short circuit and interruption of electrodes in tubes and semiconductors		P
B.4.6	Short circuit or disconnect of passive components		P
B.4.7	Continuous operation of components		N/A
B.4.8	Class 1 and Class 2 energy sources within limits during and after single fault conditions	(See appended table B.4)	P
B.4.9	Battery charging under single fault conditions.....	(See Annex M)	P

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		P
M.2.2	Compliance and test method (identify method) .. :	See below.	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	Not unintentional charging occurred for construction design.	P
	- Reverse charging of a rechargeable battery		N/A
	- Excessive discharging rate for any battery	(See appended Tables and Annex M)	P
M.3.3	Compliance .....	(See appended Tables and Annex M.3)	P

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

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		P
Q.1.1 c)	Overcurrent protective device limited output		N/A
Q.1.1 d)	IC current limiter complying with G.9		N/A
Q.1.2	Compliance and test method	See appended table Annex Q.1.	P
Q.2	Test for external circuits – paired conductor cable		N/A
	Maximum output current (A) .....		—
	Current limiting method .....		—

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) .....	90V/60Hz		264V/50Hz		—	
	Ambient T <sub>min</sub> (°C) .....	--		--		—	
	Ambient T <sub>max</sub> (°C) .....	--		--		—	
	T <sub>ma</sub> (°C) .....	See below		See below		—	
Maximum measured temperature T of part/at:		T (°C)				Allowed T <sub>max</sub> (°C)	
AC inlet(inside)		37.1	68.6	34.3	67.1	70	
Input wire		46.7	78.2	41.3	74.1	80	
AC inlet(outside)		35.3	66.8	32.3	65.1	70	
MOV1		49.4	80.9	44.3	77.1	85	
LF2 coil		63.7	95.2	48.6	81.4	120	
CX2 body		63.8	95.3	46.4	79.2	105	
PCB near BD1		71.8	103.3	50.4	83.2	130	
L1 coil		87.2	118.7	58.6	91.4	120	
C2 body		51.9	83.4	46.1	78.9	105	
T1 coil		61.1	92.6	60.2	93.0	90 <sup>1)</sup>	
T1 core		46.6	78.1	46.0	78.8	90 <sup>1)</sup>	
Mylar sheet near T1		37.0	68.5	36.1	68.9	105	
CX2 body		52.1	83.6	44.9	77.7	105	
CY5 body		41.7	73.2	41.3	74.1	105	
CN1 body		37.0	68.5	33.2	66.0	70	
PCB near JP1 (8459)		37.2	68.7	37.2	70.0	130	
PCB near U1 (80517)		50.7	82.2	51.4	84.2	130	
BAT (80517) body		43.9	75.4	45.7	78.5	Ref.	
PCB near LED1 (81201)		57.0	88.5	59.2	92.0	130	
PCB near JP1 (81183)		28.3	59.8	28.8	61.6	130	
plastic enclosure inside		33.8	35.3	34.7	67.5	Ref.	
Ambient		23.4	→55	22.2	→55	--	
Following for accessible touch temperature:							
Plastic enclosure outside		26.8	28.3	27.2	30.0	77 <sup>2)</sup>	
Metal enclosure		28.7	30.2	28.6	31.4	60 <sup>2)</sup>	
Ambient		23.5	→25.0	22.2	→25.0	--	
Supplementary information:							
1) Thermocouple method was used to measure the winding, the limit value is reduced by 10 K							
2) touch temperature limit under normal operating conditions for TS1 (> 1s~< 10s)							
Temperature T of winding:	t <sub>1</sub> (°C)	R <sub>1</sub> (Ω)	t <sub>2</sub> (°C)	R <sub>2</sub> (Ω)	T (°C)	Allowed T <sub>max</sub> (°C)	Insulation class
--	--	--	--	--	--	--	--

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

**Supplementary information:**

Supplementary information:

Note 1: Tma should be considered as directed by applicable requirement

Note 2: Tma is not included in assessment of Touch Temperatures (Clause 9)

Test on model: DS-7616NXI-K2/16P (mainboard model: DS-80517\_P REV2.0)

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
90	60	2.90	--	260.8	--	F1	2.90	Normal work, USB 2.0 load 0.5A, USB3.0 load 0.9A, PoE load 200W 8T HDD*2
100	60	2.55	3.2	255.3	--	F1	2.55	
240	60	1.06	3.2	246.7	--	F1	1.06	
264	60	0.96	--	245.9	--	F1	0.96	
264	50	0.96	--	246.4	--	F1	0.96	
240	50	1.06	3.2	247.1	--	F1	1.06	
100	50	2.56	3.2	255.8	--	F1	2.56	
90	50	2.89	--	260.5	--	F1	2.89	

**Supplementary information:**

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

Test on model: DS-7616NXI-K2/16P (mainboard model: DS-80517\_P REV2.0)

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
90	60	2.82	--	253.97	--	F1	2.82	Normal work, USB 2.0 load 0.5A, USB3.0 load 0.9A, PoE load 200W 8T HDD*2
100	60	2.51	3.2	250.31	--	F1	2.51	
240	60	1.03	3.2	240.9	--	F1	1.03	
264	60	0.94	--	240.2	--	F1	0.94	
264	50	0.93	--	239.3	--	F1	0.93	
240	50	1.03	3.2	239.8	--	F1	1.03	
100	50	2.49	3.2	249.5	--	F1	2.49	
90	50	2.80	--	253.2	--	F1	2.80	

**Supplementary information:**

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

Test on model: DS-7616NI-K2/16P (mainboard model: DS-80517\_P REV2.0)

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

<b>B.3</b>	<b>TABLE: Abnormal operating condition tests</b>							<b>P</b>
Ambient temperature (°C) .....					25.0			—
Power source for EUT: Manufacturer, model/type, output rating ..					--			—
Component No.	Abnormal Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
Openings	Blocked	90	3h	F1	2.90	Type T	Max temperature at T1 coil: 94.9 °C, T1 core : 85.9 °C, metal enclosure: 42.4°C	No fire, no explosion, no emit molten metal, no hazardous
Fan	Locked	90	3h	F1	2.90	Type T	Max temperature at T1 coil: 64.9 °C, T1 core : 53.2 °C, metal enclosure: 33.4°C	No fire, no explosion, no emit molten metal, no hazardous
Front USB 2.0	Overload	90	3h	F1	2.91--> 2.92--> 2.94--> 2.88	Type T	Max temperature at T1 coil: 67.0 °C, T1 core : 53.4 °C, metal enclosure: 33.4°C	USB 2.0 load 0.7A->0.9A->1.2A->0A, no damage, no fire, no explosion, no emit molten metal, no hazardous
Back USB 3.0	Overload	90	3h	F1	2.91--> 2.91--> 2.92--> 2.85	Type T	Max temperature at T1 coil: 65.1 °C, T1 core : 53.3 °C, L1 coil : 76.6 °C, metal enclosure: 33.6 °C	USB 3.0 load 1.0A->1.1A->1.21A->0A, no damage, no fire, no explosion, no emit molten metal, no hazardous
PoE port	Overload	90	1 min	F1	1.30->0.72	Type T	--	Unit shutdown, no fire, no explosion, no emit molten metal, no hazardous
Supplementary information:								

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

<b>B.3</b>	<b>TABLE: Abnormal operating condition tests</b>							<b>P</b>
Ambient temperature (°C) .....					25.0			—
Power source for EUT: Manufacturer, model/type, output rating ..					--			—
Component No.	Abnormal Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
<p>1. Test table is provided to record abnormal and fault conditions for all applicable energy sources including Thermal burn injury. Column "Abnormal/Fault." Specify if test condition by indicating "Abnormal" then the condition for a Clause B.3 test or "Single Fault" then the condition for Clause B.4.</p> <p>2. NH = No hazard; NB = No indication of dielectric breakdown; NC = Cheesecloth remained intact; NT = Tissue paper remained intact; NCD = No components damage.</p> <p>Test on model: DS-7616NXI-K2/16P (mainboard model: DS-80517_P REV2.0)</p>								

<b>B.4</b>	<b>TABLE: Fault condition tests</b>							<b>P</b>
Ambient temperature (°C) .....					23.1			—
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
front USB 2.0	SC	90	5 min	--	2.88	--	--	USB port shutdown immediately, no damage, no hazard
Back USB 3.0	SC	90	5 min	--	2.85	--	--	USB port shutdown immediately, no damage, no hazard
UV5 Pin2-5	SC	90	5 min	--	0.01	--	--	EUT shutdown immediately, UV5 damage, no hazard
CV108	SC	90	5 min	--	0.01	--	--	Unit shutdown immediately, no fire, no explosion, no emit molten metal, no hazardous
Supplementary information:								
<p>The most unfavourable test condition was performed</p> <p>In fault column, where SC = short-circuited.</p> <p>NH = No hazard; NB = No indication of dielectric breakdown; NC = Cheesecloth remained intact; NT = Tissue paper remained intact; NCD = No components damage.</p> <p>Test on model: DS-7616NXI-K2/16P (mainboard model: DS-80517_P REV2.0)</p>								

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

Annex M.3	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?..... :						See below		P	
	Non-rechargeable batteries			Rechargeable batteries					
	Discharging		Un-intentional charging	Charging		Discharging		Reversed charging	
	Meas. current	Manuf. Specs.		Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.
Max. current during normal condition	0.005mA	10mA	--	--	--	--	--	--	--
Max. current during fault condition	1.73mA C154 SC	10mA	1.73mA D2 SC	--	--	--	--	--	--
Test results:								Verdict	
- Chemical leaks						No chemical leaks		P	
- Explosion of the battery						No explosion		P	
- Emission of flame or expulsion of molten metal						No emission of flame or expulsion of molten metal		P	
- Electric strength tests of equipment after completion of tests						--		N/A	
Supplementary information:									
Test on model: DS-7616NXI-K2/16P (mainboard model: DS-80517_P REV2.0)									

Q.1	TABLE: Circuits intended for interconnection with building wiring (LPS)						P
Output Circuit	Condition	U <sub>oc</sub> (V)	Time (s)	I <sub>sc</sub> (A)		S (VA)	
				Meas.	Limit	Meas.	Limit
PoE port	Normal	52.2	--	0.57	≤2.88 (150/52.2)	30.0	100
PoE port	QL1M1 pin1-4 SC	52.2	--	1.35	≤2.88 (150/52.2)	67.8	100
USB 2.0 port	Normal	4.98	--	1.2	8	5.98	100
USB 2.0 port	Normal	4.99	--	1.2	8	5.98	100
HDMI	Normal	4.95	--	0	8	0	100
Supplementary Information:							
Test on model: DS-7616NXI-K2/16P (mainboard model: DS-80517_P REV2.0)							
eFuse IC/ PTC are certified and limited USB output.							
PTC are certified and limited HDMI port.							

**List of test equipment used:**

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

Instr. Code	Instrument Name	Instrument Type	Instrument I.D.	Series No.	Calibration Date	
					Last	Due
1	Power meter	WT310	hkvs-yq1524	C2QB04042V	07/28/2024	07/27/2025
2	Data Acquisition	Agilent 34972A	hkvs-yq1192	MY49012334	03/07/2024	03/08/2025
3	DC power	Chroma 62006P-300-8	hkvs-qt4267	62006PE00520	03/27/2024	03/28/2025
4	Electronic stopwatch	PC396	hkvs-sys1001	--	12/25/2024	12/26/2025

-- End of main test report --



**ANLAGE zum Prüfbericht-Nr.: CN24QVA3 002**  
**APPENDIX to Test Report No.:**

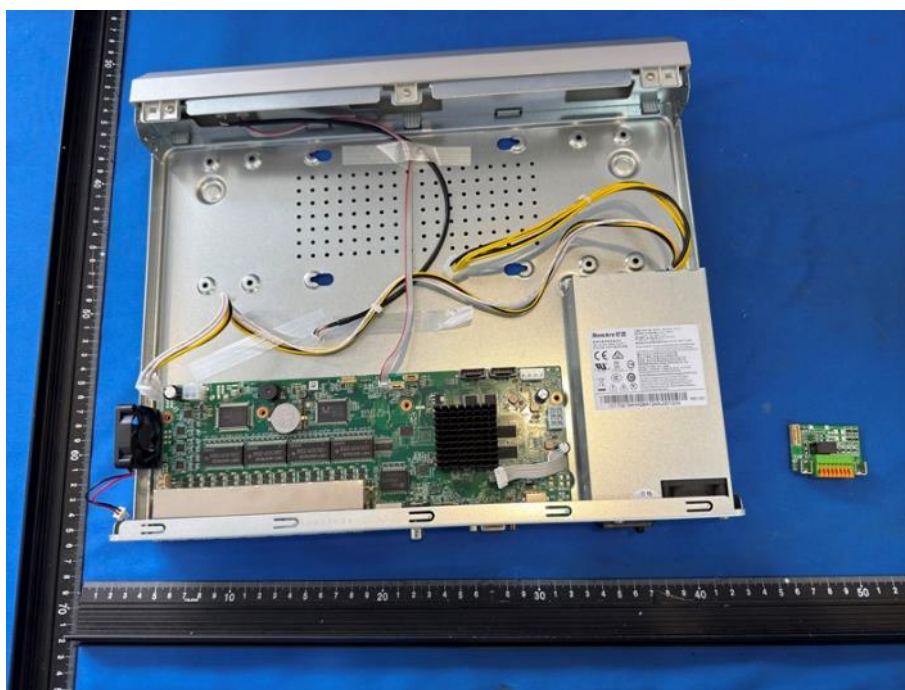
Seite 1 von 2  
Page 1 of 2

**FOTO-DOKUMENTATION**  
**PHOTO-DOCUMENTATION**

*Bild / Picture 1:*



*Bild / Picture 2:*



**ANLAGE zum Prüfbericht-Nr.: CN24QVA3 002**  
**APPENDIX to Test Report No.:**

Seite 2 von 2  
Page 2 of 2

**FOTO-DOKUMENTATION**  
**PHOTO-DOCUMENTATION**

*Bild / Picture 3:*



*Bild / Picture 4:*





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** ..... : CN24QVA3 001  
**Date of issue** ..... : 2024-12-19  
**Total number of pages** ..... : 83 (excluding attachments, refer to page 5)

**Name of Testing Laboratory**  
**preparing the Report** ..... : TÜV Rheinland (Shanghai) Co., Ltd.

**Applicant's name** ..... : Hangzhou Hikvision Digital Technology Co., Ltd.  
**Address** ..... : No. 555 Qianmo Road, Binjiang District, Hangzhou, 310052 Zhejiang, P.R. China

**Test specification:**

**Standard** ..... : IEC 62368-1:2014  
**Test procedure** ..... : CB Scheme  
**Non-standard test method** ..... : N/A

**TRF template used** ..... : IECEE OD-2020-F1:2021, Ed.1.4  
**Test Report Form No.** ..... : IEC62368\_1D  
**Test Report Form(s) Originator..** : UL(US)  
**Master TRF** ..... : Dated 2022-04-14

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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.

<b>Test Item description .....</b>	Network Video Recorder
<b>Trade Mark(s) .....</b>	HIKVISION
<b>Manufacturer .....</b>	Same as applicant
<b>Model/Type reference .....</b>	DS-7616NI-Q2/16P, DS-7616NI-Q2/16PUHK, DS-7616NI-Q2/16PCKV, DS-7616NI-Q2/16PUVS, DS-7616NI-Q2/16PKVO, DS-7616NI-Q2/16PHUN, NVR-216MH-C/16P, NVR-216MH-C/16PUHK, NVR-216MH-C/16PCKV, NVR-216MH-C/16PUVS, NVR-216MH-C/16PKVO, NVR-216MH-C/16PHUN, HWN-4216MH-16P, HWN-4216MH-16PUHK, HWN-4216MH-16PCKV, HWN-4216MH-16PUVS, HWN-4216MH-16PKVO, HWN-4216MH-16PHUN, ERI-K216-P16, DS-7616NI-K2/16P, DS-7616NI-K2/16PUHK, DS-7616NI-K2/16PCKV, DS-7616NI-K2/16PUVS, DS-7616NI-K2/16PKVO, DS-7616NI-K2/16PHUN, DS-7632NI-K2/16P, DS-7632NI-K2/16PUHK, DS-7632NI-K2/16PCKV, DS-7632NI-K2/16PUVS, DS-7632NI-K2/16PKVO, DS-7632NI-K2/16PHUN, DS-7616NI-M2/16P, DS-7616NI-M2/16PUHK, DS-7616NI-M2/16PCKV, DS-7616NI-M2/16PUVS, DS-7616NI-M2/16PKVO, DS-7616NI-M2/16PHUN, DS-7616NI-M2/16P/EDU, DS-7616NI-M2/16P/RTL, DS-7616NI-M2/16P/NRG, DS-7616NI-M2/16P/LGX, DS-7616NI-M2/16P/MFG, DS-7616NI-M2/16P/RMS, DS-7616NXI-K2/16P, DS-7616NXI-K2/16PUHK, DS-7616NXI-K2/16PCKV, DS-7616NXI-K2/16PUVS, DS-7616NXI-K2/16PKVO, DS-7616NXI-K2/16PHUN, DS-7632NXI-K2/16P, DS-7632NXI-K2/16PUHK, DS-7632NXI-K2/16PCKV, DS-7632NXI-K2/16PUVS, DS-7632NXI-K2/16PKVO, DS-7632NXI-K2/16PHUN, DS-7816NXI-K2/16P, DS-7816NXI-K2/16PUHK, DS-7816NXI-K2/16PCKV, DS-7816NXI-K2/16PUVS, DS-7816NXI-K2/16PKVO, DS-7816NXI-K2/16PHUN, DS-7832NXI-K2/16P, DS-7832NXI-K2/16PUHK, DS-7832NXI-K2/16PCKV, DS-7832NXI-K2/16PUVS, DS-7832NXI-K2/16PKVO, DS-7832NXI-K2/16PHUN, DS-7616NI-K2/16P/4G, DS-7616NI-K2/16P/4GUHK, DS-7616NI-K2/16P/4GCKV, DS-7616NI-K2/16P/4GUVS, DS-7616NI-K2/16P/4GHUN, DS-7616NI-K2/16P/4GKVO, iDS-7616NXI-M2/16P/X, iDS-7616NXI-M2/16P/XUHK, iDS-7616NXI-M2/16P/XCKV, iDS-7616NXI-M2/16P/XUVS, iDS-7616NXI-M2/16P/XKVO, iDS-7616NXI-M2/16P/XHUN, iDS-7616NXI-M2/16P/X/EDU, iDS-7616NXI-M2/16P/X/RTL, iDS-7616NXI-M2/16P/X/NRG, iDS-7616NXI-M2/16P/X/LGX, iDS-7616NXI-M2/16P/X/MFG, iDS-7616NXI-M2/16P/X/RMS, DS-7616NI-I2/16P, DS-7616NI-I2/16P(D), DS-7616NI-I2/16PUHK, DS-7616NI-I2/16PCKV, DS-7616NI-I2/16PUVS,

	DS-7616NI-I2/16PKVO, DS-7616NI-I2/16PHUN, DS-7632N-I2/16P, DS-7632N-I2/16PUHK, DS-7632N-I2/16PCKV, DS-7632N-I2/16PUVS, DS-7632N-I2/16PKVO, DS-7632N-I2/16PHUN, HWN-5216MH-16P, HWN-5232MH-16P DS-7632NI-I2/16PUHK, DS-7632NI-I2/16PCKV, DS-7632NI-I2/16PUVS, DS-7632NI-I2/16PKVO, DS-7632NI-I2/16PHUN, DS-7616NXI-I2/16P/S, DS-7616NXI-I2/16P/S(E), DS-7616NXI-I2/16P/SUHK, DS-7616NXI-I2/16P/SCKV, DS-7616NXI-I2/16P/SUVS, DS-7616NXI-I2/16P/SHUN, DS-7616NXI-I2/16P/SKVO, DS-7616NXI-I2/16P/S/EDU, DS-7616NXI-I2/16P/S/RTL, DS-7616NXI-I2/16P/S/NRG, DS-7616NXI-I2/16P/S/LGX, DS-7616NXI-I2/16P/S/MFG, DS-7616NXI-I2/16P/S/RMS, DS-7632NXI-I2/16P/S, DS-7632NXI-I2/16P/SUHK, DS-7632NXI-I2/16P/SCKV, DS-7632NXI-I2/16P/SUVS, DS-7632NXI-I2/16P/SHUN, DS-7632NXI-I2/16P/SKVO, DS-7632NXI-I2/16P/S/EDU, DS-7632NXI-I2/16P/S/RTL, DS-7632NXI-I2/16P/S/NRG, DS-7632NXI-I2/16P/S/LGX, DS-7632NXI-I2/16P/S/MFG, DS-7632NXI-I2/16P/S/RMS, DS-7616NXI-M2/16P/VPro, DS-7616NXI-M2/16P/VProUHK, DS-7616NXI-M2/16P/VProCKV, DS-7616NXI-M2/16P/VProUVS, DS-7616NXI-M2/16P/VProKVO, DS-7616NXI-M2/16P/VProHUN, DS-7616NXI-M2/16P/VPro/EDU, DS-7616NXI-M2/16P/VPro/RTL, DS-7616NXI-M2/16P/VPro/NRG, DS-7616NXI-M2/16P/VPro/LGX, DS-7616NXI-M2/16P/VPro/MFG, DS-7616NXI-M2/22P/VPro/RMS, DS-7616NXI-K2/16P(D), NVR-216MH-K/16P, DS-7632NXI-K2/16P(D), NVR-232MH-K/16P, DS-7916NXI-K2/16P, DS-XXXXXXXXXX, NVR-XXXXXXXXXX ("X"="A-Z", "a-z", "0-9", "-", "/" or blank)
<b>Ratings</b> .....	Input: 100-240V~, 50/60Hz, 3.2A Max Output: 44-57V--- 0.6A Max. (Each PoE)



<b>Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):</b>		
<input type="checkbox"/>	<b>CB Testing Laboratory:</b>	TÜV Rheinland (Shanghai) Co., Ltd.
<b>Testing location/ address .....</b>		No.177, 178, Lane 777 West Guangzhong Road, Jing'an District, Shanghai, China c/o TÜV Rheinland Suzhou Co., Ltd. Pingqian (Taicang) Modern Industrial Park, No.525, Yuewang Lingang South Road, Shaxi Town, Taicang City, Jiangsu Province, China
<b>Tested by (name, function, signature) .....</b>		
<b>Approved by (name, function, signature) .....</b>		
<input type="checkbox"/>	<b>Testing procedure: CTF Stage 1:</b>	N/A
<b>Testing location/ address .....</b>		
<b>Tested by (name, function, signature) .....</b>		
<b>Approved by (name, function, signature) .....</b>		
<input checked="" type="checkbox"/>	<b>Testing procedure: CTF Stage 2:</b>	Hangzhou Hikvision Digital Technology Co., Ltd. Test Center
<b>Testing location/ address .....</b>		No. 518 Wulianwang Street, Binjiang District Hangzhou 310052 Zhejiang China
<b>Tested by (name, function, signature) .....</b>		Meide Wang / Test engineer <i>Meide Wang</i>
<b>Witnessed by (name, function, signature) .....</b>		Kevin Gao / Project engineer <i>Kevin Gao</i>
<b>Approved by (name, function, signature) .....</b>		Ben Cao / Technical Expert <i>Ben</i>
<input type="checkbox"/>	<b>Testing procedure: CTF Stage 3 :</b>	N/A
<input type="checkbox"/>	<b>Testing procedure: CTF Stage 4:</b>	N/A
<b>Testing location/ address .....</b>		
<b>Tested by (name, function, signature) .....</b>		
<b>Witnessed by (name, function, signature) .....</b>		
<b>Approved by (name, function, signature) .....</b>		
<b>Supervised by (name, function, signature) .....</b>		

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

ATTACHMENT – National Differences (54 pages)

ATTACHMENT – Photo Documentation (43 pages)

Note: Total number of pages in each attachment is indicated in individual attachment.

**Summary of testing:****Tests performed (name of test and test clause):**

- All applicable tests as described in Test Case and Measurement Sections were performed on model DS-7616NI-Q2/16P; Additional tests were conducted on model DS-7616NI-M2/16P, DS-7616NI-K2/16P/4G, iDS-7616NXI-M2/16P/X, DS-7632NI-K2/16P, DS-7632NI-I2/16P as representative for difference between new models and original ones. See measurement section for details.
- The test samples are pre-production sample without serial number.
- The manufacturer specified maximum operating temperature is 55°C.

**Testing location:**

Hangzhou Hikvision Digital Technology Co., Ltd. Test Center

No.518 Wulianwang Street, Binjiang District Hangzhou 310052 Zhejiang China

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

EU Group Differences, EU Special National Conditions, CA, JP, US, DK, AU, NZ.

Explanation of used codes:

CA=Canada, JP=Japan, US=United States of America, DK= Denmark, IT=Italy, AU= Australia, NZ= New Zealand.

**Other national requirements request by applicant:**

Argentina\*\*, Bahrain\*\*, Belarus\*\*, Belgium\*/\*\*; Brazil\*\*, Bulgaria\*/\*\*; China\*\*, Colombia\*\*;  
 Croatia\*\*, Czech Republic\*/\*\*; Finland\*/\*\*; France\*/\*\*; Germany\*/\*\*; Greece\*/\*\*; Hungary\*/\*\*;  
 India\*\*, Indonesia\*\*, Ireland\*/\*\*; Israel; Kenya\*\*, Korea\*\*, Libya\*\*, Malaysia\*\*, Mexico\*\*,  
 Netherlands Antilles\*/\*\*; Nigeria\*\*, Norway\*/\*\*; Pakistan\*\*, Poland\*/\*\*; Portugal\*/\*\*;  
 Russian Federation\*\*, Romania\*/\*\*; Saudi Arabia\*\*, Serbia; Singapore\*\*, Slovakia\*/\*\*; Slovenia\*/\*\*; South  
 Africa\*\*, Spain\*/\*\*; Sweden\*; Switzerland\*/\*\*; Thailand\*\*; Turkey\*/\*\*; Ukraine\*\*, United Arab Emirates\*\*;  
 United Kingdom\*; Vietnam\*\*

Note(s): Countries outside the CB Scheme membership may also accept this report.

\* Only applicable for Group Differences (if any). \*\* No National Differences Declared

☒ **The product fulfils the requirements of**

- IEC 62368-1:2014
- 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 NCBs that own these marks.

&lt;Representative&gt;

IDS-7616NXI-M2/16P/X  
Q12345678 21605528

SN: Q12345678

**HIKVISION**  
**Network Video Recorder**  
Model: IDS-7616NXI-M2/16P/X  
SN: C12345678

Quantity: 1  
Date: 08/2022  
2008021825/30

**HDMI™**

Lot No.: 21605528  
Material Code: 303617217

UK CA CE  
Scan to Download App

UK CA CE  
Hik-Connect  
Made in China

6 954273 650940

QR Code

UK CA CE

UK CA CE

**HIKVISION**  
**Network Video Recorder**  
Model: IDS-7616NXI-M2/16P/X  
SN: Q12345678

I/P: 100-240V~, 50/60Hz, 3.2A MAX  
O/P: Each PoE44-57V=0.6A MAX  
CAN ICES-3(A)/NMB-3(A) IC:xxxxxx-xxxxxxxxxx  
Made in China FCC ID:2ADTD-xxxxxxxxxx

This device complies with Part 15 of the FCC Rules.  
Operation is subject to the following two conditions:  
(1) this device may not cause harmful interference, and  
(2) this device must accept any interference received,  
including interference that may cause undesired operation.  
Manufacturer: Hangzhou Hikvision Digital Technology Co., Ltd.  
Address: No.555 Qianmo Road, Binjiang District, Hangzhou 310052, China

Q12345678 Q12345678

**Note:**

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

TEST ITEM PARTICULARS:	
Classification of use by..... :	<input checked="" type="checkbox"/> Ordinary person <input type="checkbox"/> Instructed person <input type="checkbox"/> Skilled person <input type="checkbox"/> Children likely to be present
Supply Connection..... :	<input checked="" type="checkbox"/> AC Mains <input type="checkbox"/> DC Mains <input type="checkbox"/> External Circuit - not Mains connected - <input type="checkbox"/> ES1 <input type="checkbox"/> ES2 <input type="checkbox"/> ES3
Supply % Tolerance ..... :	<input checked="" type="checkbox"/> +10%/-10% <input type="checkbox"/> +20%/-15% <input type="checkbox"/> +____%/ -____% <input type="checkbox"/> None
Supply Connection – Type ..... :	<input checked="" type="checkbox"/> pluggable equipment type A - <input type="checkbox"/> non-detachable supply cord <input checked="" type="checkbox"/> appliance coupler <input type="checkbox"/> direct plug-in <input type="checkbox"/> mating connector <input type="checkbox"/> pluggable equipment type B - <input type="checkbox"/> non-detachable supply cord <input type="checkbox"/> appliance coupler <input type="checkbox"/> permanent connection <input type="checkbox"/> mating connector <input type="checkbox"/> other:
Considered current rating of protective device as part of building or equipment installation ..... :	16A (20A for US/CA); Installation location: <input checked="" type="checkbox"/> building; <input type="checkbox"/> equipment
Equipment mobility..... :	<input checked="" type="checkbox"/> movable <input type="checkbox"/> hand-held <input type="checkbox"/> transportable <input type="checkbox"/> stationary <input type="checkbox"/> for building-in <input type="checkbox"/> direct plug-in <input type="checkbox"/> rack-mounting <input type="checkbox"/> wall-mounted
Over voltage category (OVC) ..... :	<input type="checkbox"/> OVC I <input checked="" type="checkbox"/> OVC II <input type="checkbox"/> OVC III <input type="checkbox"/> OVC IV <input type="checkbox"/> other
Class of equipment ..... :	<input checked="" type="checkbox"/> Class I <input type="checkbox"/> Class II <input type="checkbox"/> Class III <input type="checkbox"/> Class II with functional earthing <input type="checkbox"/> Not classified
Access location ..... :	<input type="checkbox"/> restricted access area <input checked="" type="checkbox"/> N/A
Pollution degree (PD) ..... :	<input type="checkbox"/> PD 1 <input checked="" type="checkbox"/> PD 2 <input type="checkbox"/> PD 3
Manufacturer's specified maxium operating ambient ..... :	55 °C
IP protection class ..... :	<input checked="" type="checkbox"/> IPX0 <input type="checkbox"/> IP____
Power Systems ..... :	<input type="checkbox"/> TN <input type="checkbox"/> TT <input type="checkbox"/> IT - ____ V <sub>L-L</sub> ; <input type="checkbox"/> dc mains <input checked="" type="checkbox"/> N/A
Altitude during operation (m) ..... :	<input type="checkbox"/> 2000 m or less <input checked="" type="checkbox"/> 5000 m
Altitude of test laboratory (m) ..... :	<input checked="" type="checkbox"/> 2000 m or less <input type="checkbox"/> ____ m
Mass of equipment (kg) ..... :	<input checked="" type="checkbox"/> Approx. 2.78 Kg

<b>Possible test case verdicts:</b>	
- test case does not apply to the test object ..... : N/A	
- test object does meet the requirement ..... : P (Pass)	
- test object does not meet the requirement ..... : F (Fail)	
<b>Testing</b> ..... :	
<b>Date of receipt of test item</b> ..... : 2024-12-16	
<b>Date (s) of performance of tests</b> ..... : 2024-12-16 to 2024-12-17	
<b>General remarks:</b>	
"(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report.	
Throughout this report a <input type="checkbox"/> comma / <input checked="" type="checkbox"/> point is used as the decimal separator.	
<b>Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 02:</b>	
The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided .....	<input checked="" type="checkbox"/> <b>Yes</b> <input type="checkbox"/> <b>Not applicable</b>
<b>When differences exist; they shall be identified in the General product information section.</b>	
<b>Name and address of factory (ies)</b> .....	1) Hangzhou Hikvision Electronics Co., Ltd. No.299, Qiushi Road, Tonglu Economic Development Zone, Tonglu County, Hangzhou, 311500 Zhejiang, P.R. China  2) Hangzhou Hikvision Technology Co., Ltd. No. 700 Dongliu Road Binjiang District, Hangzhou 310052 Zhejiang P.R. China  3) Chongqing Hikvision Technology Co., Ltd. No. 118, Haikang Road, Area C, Jianqiao Industrial Park, Dadukou District, 401325 Chongqing P.R. China
<b>General product information and other remarks:</b>	
<b>Product Description –</b> The sample submitted for evaluation is a network video recorder which is powered by AC mains supply and is intended to use in information technology applications. All electronic components are mounted on the PCB and housed in a metal enclosure. This equipment have seven types of front panel, it doesn't impact on electrical construction, see photo documentation for details. This re-issued report is based on original CB reports CN23T376 001 to CN23T376 004 and with following changes: - Add additional models: DS-7616NXI-K2/16P(D), NVR-216MH-K/16P, DS-7632NXI-K2/16P(D), NVR-232MH-K/16P, DS-7916NXI-K2/16P, DS-XXXXXXXXXX, NVR-XXXXXXXXXX ("X"="A-Z", "a-z", "0-9", "-", "/" or blank) which are identical to original model DS-7616NI-Q2/16P except for model designation, no technical differences. For above described changes, no test considered to be necessary.	
<b>Model Differences –</b> All models are identical except for model designation for marketing purpose only, no technical difference.	
<b>Additional application considerations – (Considerations used to test a component or sub-assembly)</b> All components or sub-assemblies suitability of use has been checked according to sub clause 4.1.1 and 4.1.2	

<b>ENERGY SOURCE IDENTIFICATION AND CLASSIFICATION TABLE:</b>	
(Note 1: Identify the following six (6) energy source forms based on the origin of the energy.) (Note 2: The identified classification e.g., ES2, TS1, should be with respect to its ability to cause pain or injury on the body or its ability to ignite a combustible material. Any energy source can be declared Class 3 as a worse case classification e.g. PS3, ES3.)	
<b>Electrically-caused injury (Clause 5):</b> (Note: Identify type of source, list sub-assembly or circuit designation and corresponding energy source classification) Example: +5 V dc input	
ES1	
Source of electrical energy	Corresponding classification (ES)
Primary circuit of power supply unit	ES3
Secondary output of power supply unit	ES1
All output ports	ES1
<b>Electrically-caused fire (Clause 6):</b> (Note: List sub-assembly or circuit designation and corresponding energy source classification) Example: Battery pack (maximum 85 watts):	
PS2	
Source of power or PIS	Corresponding classification (PS)
All internal circuits except output ports	PS3
<b>Injury caused by hazardous substances (Clause 7)</b> (Note: Specify hazardous chemicals, whether produces ozone or other chemical construction not addressed as part of the component evaluation.) Example: Liquid in filled component	
Glycol	
Source of hazardous substances	Corresponding chemical
Non-rechargeable Lithium battery (coin type)	Lithium
<b>Mechanically-caused injury (Clause 8)</b> (Note: List moving part(s), fan, special installations, etc. & corresponding MS classification based on Table 35.) Example: Wall mount unit	
MS2	
Source of kinetic/mechanical energy	Corresponding classification (MS)
Rounded edges and corners	MS1
Equipment mass (< 7 kg)	MS1
Plastic fan blades	MS3
<b>Thermal burn injury (Clause 9)</b> (Note: Identify the surface or support, and corresponding energy source classification based on type of part, location, operating temperature and contact time in Table 38.) Example: Hand-held scanner – thermoplastic enclosure	
TS1	
Source of thermal energy	Corresponding classification (TS)
All accessible parts	TS1
<b>Radiation (Clause 10)</b> (Note: List the types of radiation present in the product and the corresponding energy source classification.) Example: DVD – Class 1 Laser Product	
RS1	
Type of radiation	Corresponding classification (RS)
LED indicator	RS1

**ENERGY SOURCE DIAGRAM**

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

Refer to “ENERGY SOURCE IDENTIFICATION AND CLASSIFICATION TABLE”

☐ ES    ☐ PS    ☐ MS    ☐ TS    ☐ RS

OVERVIEW OF EMPLOYED SAFEGUARDS				
Clause	Possible Hazard			
5.1	Electrically-caused injury			
Body Part (e.g. Ordinary)	Energy Source (ES3: Primary Filter circuit)	Safeguards		
		Basic	Supplementary	Reinforced (Enclosure)
Ordinary person	ES3: Primary circuit of power supply unit	N/A	N/A	Approved power supply unit
	ES1: Secondary output of power supply unit	N/A	N/A	N/A
	ES1: All output ports	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
All component including PCB, connector etc.	PS3: All internal circuits except output ports	Ignition not occurred and temperature within the limits	Used of IEC components and components mounted on V-0 PCB Internal wire: VW-1 Fire enclosure made of V-0 plastic enclosure and metal with openings fulfil the requirements	N/A
7.1	Injury caused by hazardous substances			
Body Part (e.g., skilled)	Energy Source (hazardous material)	Safeguards		
		Basic	Supplementary	Reinforced
Ordinary person	Lithium	N/A	N/A	Comply with Annex M
8.1	Mechanically-caused injury			
Body Part (e.g. Ordinary)	Energy Source (MS3:High Pressure Lamp)	Safeguards		
		Basic	Supplementary	Reinforced (Enclosure)
Ordinary person	MS1: edges and corners	N/A	N/A	N/A
Ordinary person	MS1: Equipment mass	N/A	N/A	N/A
Ordinary person	MS3: Plastic fan blades (DC fan)	N/A	N/A	Enclosure
9.1	Thermal Burn			
Body Part (e.g., Ordinary)	Energy Source (TS2)	Safeguards		
		Basic	Supplementary	Reinforced
Ordinary person	TS1: All 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: LED indicator	N/A	N/A	N/A

Supplementary Information:
(1) See attached energy source diagram for additional details. (2) "N" – Normal Condition; "A" – Abnormal Condition; "S" Single Fault

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
<b>4</b>	<b>GENERAL REQUIREMENTS</b>		P
4.1.1	Acceptance of materials, components and subassemblies	See appended table 4.1.2	P
4.1.2	Use of components	Components which are certified to IEC and/or national standards are used correctly within their ratings. Components not covered by IEC standards are tested under the conditions present in the equipment	P
4.1.3	Equipment design and construction	No accessible part which could cause injury.	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 .....		N/A
4.4.4.9	Accessibility and safeguard effectiveness		P
4.5	Explosion	No explosion occurs during normal/abnormal operation and single fault conditions	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 .....	Compliance	P
4.7	Equipment for direct insertion into mains socket - outlets		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	This equipment is not suitable for use in locations where children are likely to be present.	N/A
4.8.2	Instructional safeguard		N/A
4.8.3	Battery Compartment 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



IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
<b>5</b>	<b>ELECTRICALLY-CAUSED INJURY</b>		P
5.2.1	Electrical energy source classifications..... :	(See appended table 5.2)	P
5.2.2	ES1, ES2 and ES3 limits		P
5.2.2.2	Steady-state voltage and current..... :	(See appended table 5.2)	P
5.2.2.3	Capacitance limits .....		N/A
5.2.2.4	Single pulse limits .....		N/A
5.2.2.5	Limits for repetitive pulses .....		N/A
5.2.2.6	Ringing signals .....		N/A
5.2.2.7	Audio signals .....		N/A
5.3	Protection against electrical energy sources		P
5.3.1	General Requirements for accessible parts to ordinary, instructed and skilled persons		P
5.3.2.1	Accessibility to electrical energy sources and safeguards		P
5.3.2.2	Contact requirements		P
	a) Test with test probe from Annex V..... :		P
	b) Electric strength test potential (V)..... :		N/A
	c) Air gap (mm) .....	The air gap is far larger than the specified distance 0.2 mm (closest internal conductive parts is located in secondary circuit, with peak voltage much less than 420V <sub>peak</sub> ).	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	Hygroscopic materials are not used for insulating material.	P
5.4.1.3	Humidity conditioning..... :	See sub-clause 5.4.8.	P
5.4.1.4	Maximum operating temperature for insulating materials .....	See appended table 5.4.1.4.	P
5.4.1.5	Pollution degree .....	Pollution degree 2.	—
5.4.1.5.2	Test for pollution degree 1 environment and for an insulating compound		N/A
5.4.1.5.3	Thermal cycling		N/A
5.4.1.6	Insulation in transformers with varying dimensions		N/A
5.4.1.7	Insulation in circuits generating starting pulses		N/A
5.4.1.8	Determination of working voltage	Considered in certified 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 .....	Bobbin's material (phenolic) is considered to meet the requirement of this test	P
5.4.2	Clearances	Considered in certified Power Supply.	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.2.2	Determining clearance using peak working voltage	Considered in certified Power Supply.	P
5.4.2.3	Determining clearance using required withstand voltage .....		P
	a) a.c. mains transient voltage.....	2500	—
	b) d.c. mains transient voltage .....		—
	c) external circuit transient voltage .....		—
	d) transient voltage determined by measurement... : .....		—
5.4.2.4	Determining the adequacy of a clearance using an electric strength test		N/A
5.4.2.5	Multiplication factors for clearances and test voltages.....	Considered in certified Power Supply.	P
5.4.3	Creepage distances .....	Considered in certified Power Supply. (See appended table 5.4.3)	P
5.4.3.1	General		P
5.4.3.3	Material Group .....		—
5.4.4	Solid insulation	Considered in certified Power Supply.	P
5.4.4.2	Minimum distance through insulation .....		P
5.4.4.3	Insulation compound forming solid insulation		P
5.4.4.4	Solid insulation in semiconductor devices	Considered in certified Power Supply.	P
5.4.4.5	Cemented joints		N/A
5.4.4.6	Thin sheet material	Considered in certified Power Supply.	P
5.4.4.6.1	General requirements		N/A
5.4.4.6.2	Separable thin sheet material		N/A
	Number of layers (pcs) .....		N/A
5.4.4.6.3	Non-separable thin sheet material		N/A
5.4.4.6.4	Standard test procedure for non-separable thin sheet material.....		N/A
5.4.4.6.5	Mandrel test		N/A
5.4.4.7	Solid insulation in wound components	Considered in certified Power Supply.	P
5.4.4.9	Solid insulation at frequencies >30 kHz.....	Considered in certified Power Supply.	P
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	Considered in certified Power Supply.	P
5.4.8	Humidity conditioning	See below.	P
	Relative humidity (%).....	93 %	—
	Temperature (°C) .....	40 °C	—

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Duration (h) .....	120 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	Considered in certified 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 $\Delta U_{sa}$ .....		—
	$U_{op} = U_{peak} + \Delta U_{sp} + \Delta U_{sa}$ .....		—
5.5	Components as safeguards		P
5.5.1	General	Considered in certified Power Supply.	P
5.5.2	Capacitors and RC units		P
5.5.2.1	General requirement		P
5.5.2.2	Safeguards against capacitor discharge after disconnection of a connector .....	Considered in certified Power Supply.	P
5.5.3	Transformers		P
5.5.4	Optocouplers		P
5.5.5	Relays		N/A
5.5.6	Resistors		N/A
5.5.7	SPD's		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	Protective conductor served as a supplementary safeguard to prevent accessible conductive parts from exceeding ES2 limits.	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.6.2.1	General requirements	Complied.	P
5.6.2.2	Colour of insulation		P
5.6.3	Requirement for protective earthing conductors		P
	Protective earthing conductor size (mm <sup>2</sup> ) .....	Considered in certified Power Supply.	—
5.6.4	Requirement for protective bonding conductors	Green-and-yellow wire provided.	P
5.6.4.1	Protective bonding conductors	Complied with table G.5 requirement.	P
	Protective bonding conductor size (mm <sup>2</sup> ).....		—
	Protective current rating (A) .....		—
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
	Conductor size (mm <sup>2</sup> ), nominal thread diameter (mm).....	Evaluated in the approved power supply unit	P
5.6.5.2	Corrosion		P
5.6.6	Resistance of the protective system	Considered in certified Power Supply.	P
5.6.6.1	Requirements		P
5.6.6.2	Test Method Resistance ( $\Omega$ ) .....	(See appended table 5.6.6.2)	P
5.6.7	Reliable earthing		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	Clause 4, 5.3 and 5.4 of IEC 60990:1999 applied.	P
	System of interconnected equipment (separate connections/single connection) .....	Separated connection considered.	—
	Multiple connections to mains (one connection at a time/simultaneous connections) .....		—
5.7.4	Earthed conductive accessible parts .....	Following fault conditions of 6.1 and 6.2.2 of IEC 60990 for touch current measurement. (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	No such 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

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.7.7	Summation of touch currents from external circuits	No such external circuits.	N/A
	a) Equipment with earthed external circuits Measured current (mA) .....		N/A
	b) Equipment whose external circuits are not referenced to earth. Measured current (mA).....		N/A
<b>6</b>	<b>ELECTRICALLY- CAUSED FIRE</b>		P
6.2	Classification of power sources (PS) and potential ignition sources (PIS)		P
6.2.2	Power source circuit classifications		P
6.2.2.1	General		P
6.2.2.2	Power measurement for worst-case load fault ... :	(See appended table 6.2.2)	P
6.2.2.3	Power measurement for worst-case power source fault .....	(See appended table 6.2.2)	P
6.2.2.4	PS1 .....		N/A
6.2.2.5	PS2 .....		N/A
6.2.2.6	PS3 .....	(See appended table 6.2.2)	P
6.2.3	Classification of potential ignition sources		P
6.2.3.1	Arcing PIS .....	Considered in certified Power Supply.	N/A
6.2.3.2	Resistive PIS .....	Considered in certified Power Supply.	P
6.3	Safeguards against fire under normal operating and abnormal operating conditions		P
6.3.1 (a)	No ignition and attainable temperature value less than 90 % defined by ISO 871 or less than 300 °C for unknown materials..... :	(See appended table 5.4.1.5, 6.3.2, 9.0, B.2.6)	P
6.3.1 (b)	Combustible materials outside fire enclosure		N/A
6.4	Safeguards against fire under single fault conditions		P
6.4.1	Safeguard Method	The method "Control of fire spread" is selected	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..... :		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		N/A
6.4.5.2	Supplementary safeguards .....		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
6.4.6	Control of fire spread in PS3 circuit	Compliance detailed as follows: – <u>Printed board</u> : rated min. V-0 – <u>Power Supply</u> : IEC 62368-1 certified enclosed Power Supply used. – <u>All other components</u> : at least V-2 except for parts mounted on min. V-1 material or small parts of combustible material (with mass less than 4g) or components complying to relevant IEC standard, and within fire enclosure. <u>Fire enclosure</u> : V-0 plastic enclosure or metal enclosure used as fire enclosure.	P
6.4.7	Separation of combustible materials from a PIS		N/A
6.4.7.1	General .....	(See tables 6.2.3.1 and 6.2.3.2)	N/A
6.4.7.2	Separation by distance		N/A
6.4.7.3	Separation by a fire barrier		N/A
6.4.8	Fire enclosures and fire barriers	Metal enclosure used as fire enclosure.	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) .....	Side round openings <5mm	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) .....	Bottom round openings <5mm	P
	Flammability tests for the bottom of a fire enclosure .....	Metal enclosure used as fire enclosure. Considered in certified Power Supply.	P
6.4.8.3.5	Integrity of the fire enclosure, condition met: a), b) or c).....		N/A
6.4.8.4	Separation of PIS from fire enclosure and fire barrier distance (mm) or flammability rating.....	V-0 plastic fire enclosure used for front panel	P
6.5	Internal and external wiring		P
6.5.1	Requirements		P
6.5.2	Cross-sectional area (mm <sup>2</sup> ) .....	Certified Power Supply	—
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		P
<b>7</b>	<b>INJURY CAUSED BY HAZARDOUS SUBSTANCES</b>		<b>P</b>

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Clause	Requirement + Test	Result - Remark	Verdict
7.2	Reduction of exposure to hazardous substances		N/A
7.3	Ozone exposure		N/A
7.4	Use of personal safeguards (PPE)		N/A
	Personal safeguards and instructions..... :		—
7.5	Use of instructional safeguards and instructions		N/A
	Instructional safeguard (ISO 7010)..... :		—
7.6	Batteries .....	(see annex M)	P
<b>8</b>	<b>MECHANICALLY-CAUSED INJURY</b>		P
8.1	General		P
8.2	Mechanical energy source classifications	MS1: equipment mass MS1: rounded edges and corners	P
8.3	Safeguards against mechanical energy sources		P
8.4	Safeguards against parts with sharp edges and corners	No sharp edges and corners	P
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 rotating part of the build-in DC fans are protected by the enclosure, which considered no accessible to the user.	P
8.5.2	Instructional Safeguard..... :		—
8.5.4	Special categories of equipment comprising moving parts		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..... :	(See Annex F.4 and Annex K)	N/A
8.5.4.2.2	Instructional safeguards against moving parts		N/A
	Instructional Safeguard..... :		—
8.5.4.2.3	Disconnection from the supply		N/A
8.5.4.2.4	Probe type and force (N) .....		N/A
8.5.5	High Pressure Lamps		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		N/A
8.6.1	Product classification		N/A
	Instructional Safeguard..... :		—
8.6.2	Static stability		N/A
8.6.2.2	Static stability test		N/A
	Applied Force..... :		—
8.6.2.3	Downward Force Test		N/A
8.6.3	Relocation stability test		N/A




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Clause	Requirement + Test	Result - Remark	Verdict
	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		N/A
8.10.1	General		N/A
8.10.2	Marking and instructions		N/A
	Instructional Safeguard..... :		—
8.10.3	Cart, stand or carrier loading test and compliance		N/A
	Applied force..... :		—
8.10.4	Cart, stand or carrier impact test		N/A
8.10.5	Mechanical stability		N/A
	Applied horizontal force (N)..... :		—
8.10.6	Thermoplastic temperature stability (°C)..... :		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 <i>N</i> ..... :		N/A
8.11.4	Mechanical strength test 250N, including end stops		N/A
8.12	Telescoping or rod antennas.....	(See Annex T)	N/A
	Button/Ball diameter (mm) ..... :		—
<b>9</b>	<b>THERMAL BURN INJURY</b>		<b>P</b>
9.2	Thermal energy source classifications	All accessible surfaces are classified as TS1, see appended table 5.4.1.4, 6.3.2, 9.0, B.2.6.	P
9.3	Safeguard against thermal energy sources		P
9.4	Requirements for safeguards		N/A
9.4.1	Equipment safeguard		N/A
9.4.2	Instructional safeguard ..... :		N/A
<b>10</b>	<b>RADIATION</b>		<b>P</b>
10.2	Radiation energy source classification		P

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Clause	Requirement + Test	Result - Remark	Verdict
10.2.1	General classification	RS1: Indicating LEDs (Indicating use only, considered as low power consumption application and exempt group)	P
10.3	Protection against laser radiation		N/A
	Laser radiation that exists in the equipment:		—
	Normal, abnormal, single-fault..... :		N/A
	Instructional safeguard..... :		—
	Tool ..... :		—
10.4	Protection against visible, infrared, and UV radiation		P
10.4.1	General		P
10.4.1.a)	RS3 for Ordinary and instructed persons..... :		N/A
10.4.1.b)	RS3 accessible to a skilled person ..... :		N/A
	Personal safeguard (PPE) instructional safeguard..... :		—
10.4.1.c)	Equipment visible, IR, UV does not exceed RS1 ..... :	RS1: Indicating LEDs (Indicating use only, considered as low power consumption application and exempt group)	P
10.4.1.d)	Normal, abnormal, single-fault conditions ..... :		N/A
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 ..... :		N/A
10.4.2	Instructional safeguard..... :		N/A
10.5	Protection against x-radiation		N/A
10.5.1	X- radiation energy source that exists equipment :	(See appended table B.3 & B.4)	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..... :	(See appended table B.3 & B.4)	N/A
	Maximum radiation (pA/kg) ..... :		N/A
10.6	Protection against acoustic energy sources		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

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Clause	Requirement + Test	Result - Remark	Verdict
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 analogue input		N/A
	Input voltage with 94 dB(A) $L_{Aeq}$ acoustic pressure output .....		—
10.6.5.2	Corded listening devices with digital input		N/A
	Maximum dB(A) .....		—
10.6.5.3	Cordless listening device		N/A
	Maximum dB(A) .....		—
<b>B</b>	<b>NORMAL OPERATING CONDITION TESTS, ABNORMAL OPERATING CONDITION TESTS AND SINGLE FAULT CONDITION TESTS</b>		P
B.2	Normal Operating Conditions		P
B.2.1	General requirements .....	(See Test Item Particulars and appended test tables)	P
	Audio Amplifiers and equipment with audio amplifiers .....		N/A
B.2.3	Supply voltage and tolerances	+10%/-10%	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	Not replaced by ordinary person	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	Compliance.	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		N/A
B.4.3.1	Motor blocked or rotor locked increasing the internal ambient temperature .....	(See Clause G.5)	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
B.4.4	Short circuit of functional insulation	(See appended table B.4)	P
B.4.4.1	Short circuit of clearances for functional insulation	(See appended table B.4)	P
B.4.4.2	Short circuit of creepage distances for functional insulation		P
B.4.4.3	Short circuit of functional insulation on coated printed boards		N/A
B.4.5	Short circuit and interruption of electrodes in tubes and semiconductors		P
B.4.6	Short circuit or disconnect of passive components		P
B.4.7	Continuous operation of components		N/A
B.4.8	Class 1 and Class 2 energy sources within limits during and after single fault conditions	(See appended table B.4)	P
B.4.9	Battery charging under single fault conditions..... :	(See Annex M)	P
<b>C</b>	<b>UV RADIATION</b>		N/A
C.1	Protection of materials in equipment from UV radiation		N/A
C.1.2	Requirements		N/A
C.1.3	Test method		N/A
C.2	UV light conditioning test		N/A
C.2.1	Test apparatus		N/A
C.2.2	Mounting of test samples		N/A
C.2.3	Carbon-arc light-exposure apparatus		N/A
C.2.4	Xenon-arc light exposure apparatus		N/A
<b>D</b>	<b>TEST GENERATORS</b>		N/A
D.1	Impulse test generators		N/A
D.2	Antenna interface test generator		N/A
D.3	Electronic pulse generator		N/A
<b>E</b>	<b>TEST CONDITIONS FOR EQUIPMENT CONTAINING AUDIO AMPLIFIERS</b>		N/A
E.1	Audio amplifier normal operating conditions		N/A
	Audio signal voltage (V) .....		—
	Rated load impedance ( $\Omega$ ) .....		—
E.2	Audio amplifier abnormal operating conditions		N/A
<b>F</b>	<b>EQUIPMENT MARKINGS, INSTRUCTIONS, AND INSTRUCTIONAL SAFEGUARDS</b>		P
F.1	General requirements		P
	Instructions – Language .....	English	—
F.2	Letter symbols and graphical symbols		P
F.2.1	Letter symbols according to IEC60027-1		N/A
F.2.2	Graphic symbols IEC, ISO or manufacturer specific		P
F.3	Equipment markings		P

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Clause	Requirement + Test	Result - Remark	Verdict
F.3.1	Equipment marking locations	The equipment marking is provided and is readily visible in operator access area	P
F.3.2	Equipment identification markings		P
F.3.2.1	Manufacturer identification .....	See copy of marking plate	—
F.3.2.2	Model identification .....	See copy of marking plate	—
F.3.3	Equipment rating markings	See copy of marking plate	P
F.3.3.1	Equipment with direct connection to mains		P
F.3.3.2	Equipment without direct connection to mains	Not such equipment.	N/A
F.3.3.3	Nature of supply voltage .....	See copy of marking plate	—
F.3.3.4	Rated voltage .....	See copy of marking plate	—
F.3.3.5	Rated frequency .....	See copy of marking plate	—
F.3.3.6	Rated current or rated power .....	See copy of marking plate	—
F.3.3.7	Equipment with multiple supply connections		N/A
F.3.4	Voltage setting device		N/A
F.3.5	Terminals and operating devices		N/A
F.3.5.1	Mains appliance outlet and socket-outlet markings .....		N/A
F.3.5.2	Switch position identification marking .....		N/A
F.3.5.3	Replacement fuse identification and rating markings.....	Considered in certified Power Supply	P
F.3.5.4	Replacement battery identification marking .....		N/A
F.3.5.5	Terminal marking location		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	The symbol “  ” used.	P
F.3.6.1.2	Neutral conductor terminal		N/A
F.3.6.1.3	Protective bonding conductor terminals	Not marked.	N/A
F.3.6.2	Class II equipment (IEC60417-5172)	Class I equipment.	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	—
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 subjected to the permanence of marking test, 15 sec. for water and 15 sec. for petroleum spirit. After each test, the marking remained legible.	P
F.4	Instructions		P

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Clause	Requirement + Test	Result - Remark	Verdict
	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
	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	Not such equipment	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	Not used as instructional safeguard	N/A
	i) Permanently connected equipment not provided with all-pole mains switch		N/A
	j) Replaceable components or modules providing safeguard function		N/A
F.5	Instructional safeguards		P
	Where "instructional safeguard" is referenced in the test report it specifies the required elements, location of marking and/or instruction		P
<b>G</b>	<b>COMPONENTS</b>		P
<b>G.1</b>	<b>Switches</b>		P
G.1.1	General requirements		P
G.1.2	Ratings, endurance, spacing, maximum load		P
<b>G.2</b>	<b>Relays</b>		N/A
G.2.1	General requirements	No such component provided	N/A
G.2.2	Overload test		N/A
G.2.3	Relay controlling connectors supply power		N/A
G.2.4	Mains relay, modified as stated in G.2		N/A
<b>G.3</b>	<b>Protection Devices</b>		P
G.3.1	Thermal cut-offs	No such component provided	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	No such component provided	N/A
G.3.2.1b)	Thermal links tested as part of the equipment		N/A
	Aging hours (H) .....		—
	Single Fault Condition .....		—

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Clause	Requirement + Test	Result - Remark	Verdict
	Test Voltage (V) and Insulation Resistance ( $\Omega$ ) . :		—
G.3.3	PTC Thermistors	No such component provided	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 ..... :	(See appended Table B.4)	N/A
<b>G.4</b>	<b>Connectors</b>		P
G.4.1	Spacings	Considered in Certified Power Supply.	P
G.4.2	Mains connector configuration ..... :		N/A
G.4.3	Plug is shaped that insertion into mains socket-outlets or appliance coupler is unlikely		N/A
<b>G.5</b>	<b>Wound Components</b>		P
G.5.1	Wire insulation in wound components ..... :	Considered in Certified Power Supply.	P
G.5.1.2 a)	Two wires in contact inside wound component, angle between 45° and 90°		N/A
G.5.1.2 b)	Construction subject to routine testing		N/A
G.5.2	Endurance test on wound components	Considered in Certified Power Supply.	P
G.5.2.1	General test requirements		N/A
G.5.2.2	Heat run test		N/A
	Time (s) ..... :		—
	Temperature (°C)..... :		—
G.5.2.3	Wound Components supplied by mains		N/A
<b>G.5.3</b>	<b>Transformers</b>		P
G.5.3.1	Requirements applied (IEC61204-7, IEC61558-1/-2, and/or IEC62368-1) ..... :	Considered in Certified Power Supply.	P
	Position ..... :		—
	Method of protection ..... :		—
G.5.3.2	Insulation		N/A
	Protection from displacement of windings ..... :		—
G.5.3.3	Overload test ..... :	(See appended table B.3)	N/A
G.5.3.3.1	Test conditions		N/A
G.5.3.3.2	Winding Temperatures testing in the unit		N/A
G.5.3.3.3	Winding Temperatures - Alternative test method		N/A
<b>G.5.4</b>	<b>Motors</b>		P
G.5.4.1	General requirements		P
	Position ..... :	The rotating part of the build-in DC fans are protected by the enclosure, which considered no accessible to the user.	—
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



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Clause	Requirement + Test	Result - Remark	Verdict
	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		N/A
G.5.4.6.2	Tested in the unit		N/A
	Maximum Temperature .....		N/A
	Electric strength test (V) .....		N/A
G.5.4.6.3	Tested on the bench - Alternative test method; test time (h) .....		N/A
	Electric strength test (V).....		N/A
G.5.4.7	Motors with capacitors		N/A
G.5.4.8	Three-phase motors		N/A
G.5.4.9	Series motors		N/A
	Operating voltage .....		—
<b>G.6</b>	<b>Wire Insulation</b>		N/A
G.6.1	General		N/A
G.6.2	Solvent-based enamel wiring insulation		N/A
<b>G.7</b>	<b>Mains supply cords</b>		N/A
G.7.1	General requirements		N/A
	Type .....		—
	Rated current (A) .....		—
	Cross-sectional area (mm <sup>2</sup> ), (AWG) .....		—
G.7.2	Compliance and test method		N/A
G.7.3	Cord anchorages and strain relief for non-detachable power supply cords		N/A
G.7.3.2	Cord strain relief		N/A
G.7.3.2.1	Requirements		N/A
	Strain relief test force (N) .....		—
G.7.3.2.2	Strain relief mechanism failure		N/A
G.7.3.2.3	Cord sheath or jacket position, distance (mm) .....		—
G.7.3.2.4	Strain relief comprised of polymeric material		N/A
G.7.4	Cord Entry .....	(See appended table 5.4.11.1)	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) .....		—

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Clause	Requirement + Test	Result - Remark	Verdict
	Diameter (m).....:		—
	Temperature (°C).....:		—
G.7.6	Supply wiring space		N/A
G.7.6.2	Stranded wire		N/A
G.7.6.2.1	Test with 8 mm strand		N/A
<b>G.8</b>	<b>Varistors</b>		P
G.8.1	General requirements	Considered in Certified Power Supply.	P
G.8.2	Safeguard against shock		N/A
G.8.3	Safeguard against fire		N/A
G.8.3.2	Varistor overload test..... :		N/A
G.8.3.3	Temporary overvoltage ..... :		N/A
<b>G.9</b>	<b>Integrated Circuit (IC) Current Limiters</b>		N/A
G.9.1 a)	Manufacturer defines limit at max. 5A.	No such component provided	N/A
G.9.1 b)	Limiters do not have manual operator or reset		N/A
G.9.1 c)	Supply source does not exceed 250 VA .....:		—
G.9.1 d)	IC limiter output current (max. 5A).....:		—
G.9.1 e)	Manufacturers' defined drift .....:		—
G.9.2	Test Program 1		N/A
G.9.3	Test Program 2		N/A
G.9.4	Test Program 3		N/A
<b>G.10</b>	<b>Resistors</b>		N/A
G.10.1	General requirements	No such component provided	N/A
G.10.2	Resistor test		N/A
G.10.3	Test for resistors serving as safeguards between the mains and an external circuit consisting of a coaxial cable		N/A
G.10.3.1	General requirements		N/A
G.10.3.2	Voltage surge test		N/A
G.10.3.3	Impulse test		N/A
<b>G.11</b>	<b>Capacitor and RC units</b>		P
G.11.1	General requirements	Considered in Certified Power Supply.	P
G.11.2	Conditioning of capacitors and RC units		P
G.11.3	Rules for selecting capacitors		P
<b>G.12</b>	<b>Optocouplers</b>		P
	Optocouplers comply with IEC 60747-5-5:2007 Spacing or Electric Strength Test (specify option and test results) ..... :	Considered in Certified Power Supply.	P
	Type test voltage Vini .....:		—
	Routine test voltage, Vini,b .....:		—
<b>G.13</b>	<b>Printed boards</b>		P
G.13.1	General requirements		P

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Clause	Requirement + Test	Result - Remark	Verdict
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 .....	(See appended table 5.4.4.5)	N/A
	Number of insulation layers (pcs) .....		—
G.13.6	Tests on coated printed boards		N/A
G.13.6.1	Sample preparation and preliminary inspection		N/A
G.13.6.2a)	Thermal conditioning		N/A
G.13.6.2b)	Electric strength test		N/A
G.13.6.2c)	Abrasion resistance test		N/A
<b>G.14</b>	<b>Coating on components terminals</b>		N/A
G.14.1	Requirements .....	(See G.13)	N/A
<b>G.15</b>	<b>Liquid filled components</b>		N/A
G.15.1	General requirements		N/A
G.15.2	Requirements		N/A
G.15.3	Compliance and test methods		N/A
G.15.3.1	Hydrostatic pressure test		N/A
G.15.3.2	Creep resistance test		N/A
G.15.3.3	Tubing and fittings compatibility test		N/A
G.15.3.4	Vibration test		N/A
G.15.3.5	Thermal cycling test		N/A
G.15.3.6	Force test		N/A
G.15.4	Compliance		N/A
<b>G.16</b>	<b>IC including capacitor discharge function (ICX)</b>		N/A
a)	Humidity treatment in accordance with sc 5.4.8 – 120 hours		N/A
b)	Impulse test using circuit 2 with $U_c =$ to transient voltage .....		N/A
C1)	Application of ac voltage at 110% of rated voltage for 2.5 minutes		N/A
C2)	Test voltage .....		—
D1)	10,000 cycles on and off using capacitor with smallest capacitance resistor with largest resistance specified by manufacturer		N/A
D2)	Capacitance .....		—
D3)	Resistance .....		—

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Clause	Requirement + Test	Result - Remark	Verdict
<b>H</b>	<b>CRITERIA FOR TELEPHONE RINGING SIGNALS</b>		N/A
H.1	General		N/A
H.2	Method A		N/A
H.3	Method B		N/A
H.3.1	Ringing signal		N/A
H.3.1.1	Frequency (Hz) .....		—
H.3.1.2	Voltage (V) .....		—
H.3.1.3	Cadence; time (s) and voltage (V) .....		—
H.3.1.4	Single fault current (mA): .....		—
H.3.2	Tripping device and monitoring voltage .....		N/A
H.3.2.1	Conditions for use of a tripping device or a monitoring voltage complied with		N/A
H.3.2.2	Tripping device		N/A
H.3.2.3	Monitoring voltage (V) .....		—
<b>J</b>	<b>INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION</b>		P
	General requirements	Considered in Certified Power Supply.	P
<b>K</b>	<b>SAFETY INTERLOCKS</b>		N/A
K.1	General requirements	No safety interlock	N/A
K.2	Components of safety interlock safeguard mechanism .....	(See Annex G)	N/A
K.3	Inadvertent change of operating mode		N/A
K.4	Interlock safeguard override		N/A
K.5	Fail-safe		N/A
	Compliance .....	(See appended table B.4)	N/A
K.6	Mechanically operated safety interlocks		N/A
K.6.1	Endurance requirement		N/A
K.6.2	Compliance and Test method .....		N/A
K.7	Interlock circuit isolation		N/A
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 .....	(See appended table 5.4.9)	N/A
<b>L</b>	<b>DISCONNECT DEVICES</b>		P
L.1	General requirements	Appliance inlet used as disconnect device	P
L.2	Permanently connected equipment		N/A
L.3	Parts that remain energized	No such parts.	N/A
L.4	Single phase equipment		P
L.5	Three-phase equipment		N/A
L.6	Switches as disconnect devices		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
L.7	Plugs as disconnect devices		N/A
L.8	Multiple power sources		N/A
<b>M</b>	<b>EQUIPMENT CONTAINING BATTERIES AND THEIR PROTECTION CIRCUITS</b>		P
M.1	General requirements		P
M.2	Safety of batteries and their cells		P
M.2.1	Requirements		P
M.2.2	Compliance and test method (identify method)...	See below.	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	Not unintentional charging occurred for construction design.	P
	- Reverse charging of a rechargeable battery		N/A
	- Excessive discharging rate for any battery	(See appended Tables and Annex M)	P
M.3.3	Compliance .....	(See appended Tables and Annex M.3)	P
M.4	Additional safeguards for equipment containing secondary lithium battery		N/A
M.4.1	General		N/A
M.4.2	Charging safeguards		N/A
M.4.2.1	Charging operating limits		N/A
M.4.2.2a)	Charging voltage, current and temperature .....	(See Annex M.4)	—
M.4.2.2 b)	Single faults in charging circuitry .....	(See Annex B.4)	—
M.4.3	Fire Enclosure		N/A
M.4.4	Endurance of equipment containing a secondary lithium battery		N/A
M.4.4.2	Preparation		N/A
M.4.4.3	Drop and charge/discharge function tests		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		N/A
M.6.1	Short circuits		N/A
M.6.1.1	General requirements		N/A
M.6.1.2	Test method to simulate an internal fault		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
M.6.1.3	Compliance (Specify M.6.1.2 or alternative method) .....		N/A
M.6.2	Leakage current (mA) .....		N/A
M.7	Risk of explosion from lead acid and NiCd batteries		N/A
M.7.1	Ventilation preventing explosive gas concentration		N/A
M.7.2	Compliance and test method		N/A
M.8	Protection against internal ignition from external spark sources of lead acid batteries		N/A
M.8.1	General requirements		N/A
M.8.2	Test method		N/A
M.8.2.1	General requirements		N/A
M.8.2.2	Estimation of hypothetical volume $V_z$ (m <sup>3</sup> /s).....		—
M.8.2.3	Correction factors .....		—
M.8.2.4	Calculation of distance $d$ (mm) .....		—
M.9	Preventing electrolyte spillage		N/A
M.9.1	Protection from electrolyte spillage		N/A
M.9.2	Tray for preventing electrolyte spillage		N/A
M.10	Instructions to prevent reasonably foreseeable misuse (Determination of compliance: inspection, data review; or abnormal testing) .....		N/A
<b>N</b>	<b>ELECTROCHEMICAL POTENTIALS</b>		P
	Metal(s) used.....	Pollution degree considered	—
<b>O</b>	<b>MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES</b>		P
	Figures O.1 to O.20 of this Annex applied .....	Considered.	—
<b>P</b>	<b>SAFEGUARDS AGAINST ENTRY OF FOREIGN OBJECTS AND SPILLAGE OF INTERNAL LIQUIDS</b>		P
P.1	General requirements		P
P.2.2	Safeguards against entry of foreign object		P
	Location and Dimensions (mm) .....	All openings <5mm	—
P.2.3	Safeguard against the consequences of entry of foreign object		N/A
P.2.3.1	Safeguards against the entry of a foreign object		N/A
	Openings in transportable equipment		N/A
	Transportable equipment with metalized plastic parts.....		N/A
P.2.3.2	Openings in transportable equipment in relation to metallized parts of a barrier or enclosure (identification of supplementary safeguard) .....		N/A
P.3	Safeguards against spillage of internal liquids		N/A
P.3.1	General requirements		N/A
P.3.2	Determination of spillage consequences		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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 .....	(See G.13.6.2)	N/A
P.4.2 c)	Mechanical strength testing .....	(See Annex T)	N/A
<b>Q</b>	<b>CIRCUITS INTENDED FOR INTERCONNECTION WITH BUILDING WIRING</b>		<b>P</b>
Q.1	Limited power sources		P
Q.1.1 a)	Inherently limited output		N/A
Q.1.1 b)	Impedance limited output		N/A
	- Regulating network limited output under normal operating and simulated single fault condition		P
Q.1.1 c)	Overcurrent protective device limited output		N/A
Q.1.1 d)	IC current limiter complying with G.9		N/A
Q.1.2	Compliance and test method	See appended table Annex Q.1.	P
Q.2	Test for external circuits – paired conductor cable		N/A
	Maximum output current (A) .....		—
	Current limiting method.....:		—
<b>R</b>	<b>LIMITED SHORT CIRCUIT TEST</b>		<b>N/A</b>
R.1	General requirements	Part of Certified Power Supply, not evaluated.	N/A
R.2	Determination of the overcurrent protective device and circuit		N/A
R.3	Test method Supply voltage (V) and short-circuit current (A)). .....		N/A
<b>S</b>	<b>TESTS FOR RESISTANCE TO HEAT AND FIRE</b>		<b>N/A</b>
S.1	Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W	Fire enclosure is made of metal or meet V-0 plastic.	N/A
	Samples, material.....:		—
	Wall thickness (mm) .....		—
	Conditioning (°C) .....		—
	Test flame according to IEC 60695-11-5 with conditions as set out		N/A
	- Material not consumed completely		N/A
	- Material extinguishes within 30s		N/A
	- No burning of layer or wrapping tissue		N/A
S.2	Flammability test for fire enclosure and fire barrier integrity		N/A



IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	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 enclosure materials of equipment with a steady-state power exceeding 4000 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
<b>T</b>	<b>MECHANICAL STRENGTH TESTS</b>		P
T.1	General requirements		P
T.2	Steady force test, 10 N ..... :	All primary circuits are enclosed in Certified Power Supply, which is impossible to be touched during the service.	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		P
T.7	Drop test ..... :		N/A
T.8	Stress relief test..... :	(See appended table T.8)	P
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)..... :		—

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
T.10	Glass fragmentation test..... :	(See sub-clause 4.4.4.9)	N/A
T.11	Test for telescoping or rod antennas		N/A
	Torque value (Nm) ..... :		—
<b>U</b>	<b>MECHANICAL STRENGTH OF CATHODE RAY TUBES (CRT) AND PROTECTION AGAINST THE EFFECTS OF IMPLOSION</b>		N/A
U.1	General requirements		N/A
U.2	Compliance and test method for non-intrinsically protected CRTs		N/A
U.3	Protective Screen..... :	(See Annex T)	N/A
<b>V</b>	<b>DETERMINATION OF ACCESSIBLE PARTS (FINGERS, PROBES AND WEDGES)</b>		P
V.1	Accessible parts of equipment		P
V.2	Accessible part criterion		P

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

4.1.2	TABLE: List of critical components					P
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity <sup>1) 2)</sup>	
Switching power supply	Shenzhen Huntkey Electric Co., Ltd.	HDZ2802-3A S2	Input: 100-240 Vac, 5A, 50-60Hz, output: +52 Vdc/4.6 A, +12 Vdc/5 A max, Max. 280 W	IEC 62368-1	CB Certificate No.: (NO120868)	
(alternative)	CHANNEL WELL TECHNOLOGY CO., LTD	KSA-300S2	Input: 100-240 Vac, 5A, 50-60Hz, output: +52 Vdc/4.6 A, +12 Vdc/3.33 A max, Max. 280 W	IEC 62368-1:2014	CB Certificate No.: (JPTUV-102846)	
(alternative)	Delta Electronics, Inc.	DPS-280AB-4A	Input: 100-240 Vac, 47-63 Hz, 3-6 A; Output: +52 Vdc/4.6 A max, +12Vdc/3.4 A max, Max 280 W	IEC 62368-1:2014	CB Certificate No.: (JPTUV-099682)	
(alternative)	ACBEL POLYTECH INC.	FLXA2281A	Input: 100-240 Vac, 50-60 Hz, 6 A; Output: +52 Vdc/4.6 A, +12Vdc/5.0 A max, Max 280 W, 5000m	IEC 62368-1:2018	Nemko CB Certificate No.: (NO122998)	
(alternative)	DELTA ELECTRONICS INC	DPS-280AB-8 A	Input: 100-240 Vac, 50-60 Hz, 5 A; Output: +52 Vdc/4.6 A, +12Vdc/6.0 A max, Max 280 W, 5000m	IEC 62368-1:2018	CB Certificate No.: (JPTUV-135150)	
PCB	HUIZHOU CHINA EAGLE ELECTRONIC TECHNOLOGY CO LTD	CA-F121	V-0, 130 °C	UL 796	UL E198681	
(alternative)	SHENZHEN KINWONG ELECTRONIC CO LTD	8B	V-0, 130 °C	UL 796	UL E243951	

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
(alternative)	GUANGZHOU FAST-PRINT CIRCUIT TECHNOLOGY CO LTD	M11	V-0, 130 °C	UL 796	UL E204460
(alternative)	ZHEJIANG OULONG ELECTRIC CO LTD	OL-D	V-0, 130 °C	UL 796	UL E231017
(alternative)	Interchangeable	--	V-0, 130 °C	UL 796	UL
RTC Battery (Button Type)	POWER GLORY BATTERY TECH(SHENZHEN) CO.,LTD	CR1220	Non-rechargeable, Max Abnormal Charging Current 10mA Max Abnormal Charging Voltage 5.0V dc	UL 1642 IEC/EN/UL/CSA 62368-1	UL MH29853 Test with appliance
(alternative)	GUANGZHOU TIANQIU ENTERPRISE CO LTD	CR1220	Non-rechargeable, Max Abnormal Charging Current 2.5 mA Max Abnormal Charging Voltage 3.5 V dc	UL 1642 IEC/EN/UL/CSA 62368-1	UL MH48705 Test with appliance
Metal enclosure	--	--	Metal, thickness 1.5 mm min.	IEC 62368-1	Test with appliance
Front plastic cover	KINGFA SCI & TECH CO LTD	FRABS-518	V-0, 60 °C, thickness 1.4 mm min.	UL 94	UL E171666
(alternative)	NINGBO LG YONGXING CHEMICAL CO LTD	HI-121H	Thickness 1.4 mm, HB	UL 94 IEC/EN/UL/CSA IEC 62368-1	UL E203955 Test with appliance
(alternative)	KINGFA SCI & TECH CO LTD	HP-126	Thickness 1.2 mm, HB	UL 94 IEC/EN/UL/CSA IEC 62368-1	UL E171666 Test with appliance
(alternative)	Interchangeable	--	V-0, 60 °C, thickness 1.2 mm min.	UL 94	UL
DC fan	Sunonwealth Electric Machine Industry Co.,Ltd	FD124010LB	12 Vdc, 55 mA,, 5.7 CFM, 5000 RPM	EN 62368-1:2014+A11	TUV R 50019837

IEC 62368-1					
Clause	Requirement + Test			Result - Remark	Verdict
(alternative)	Sunonwealth Electronics (Kunshan) Co.,Ltd.	HA40101V4-000C-999	12 Vdc, 65 mA, 5.3 CFM, 4500 RPM	EN 62368-1:2014	TUV R 50016065
(alternative)	Yen Sun Technology Corp.	FD124010, FD124010LB	12 Vdc, 55 mA, 4500 RPM, 4.5 CFM	EN 62368-1:2014	TUV R 50027591
(alternative)	Dongguan Protechnic Electric Co., Ltd.	MGA4012SB-O10	12 Vdc, 60 mA, 5.3 CFM, 4600 RPM	EN 62368-1:2014	TUV B 031023 0138
(alternative)	Asia Vital Components Co.,Ltd.	DAZA0410B2H-021	12 Vdc, 60 mA, 6.89 CFM, 5000 RPM	EN 62368-1:2014	TUV B 025730 0883
(alternative)	Sunonwealth Electric Machine Industry Co.,Ltd	KD1204PFB3	12 Vdc, 55 mA, 5000 RPM, 5.7 CFM	EN 62368-1:2014	TUV R 50019837
(alternative)	Dongguan Protechnic Electric Co., Ltd.	MGA4012SR-O10	12 Vdc, 60 mA, 4600 RPM, 5.3 CFM	EN 62368-1:2014+A11:2017	TUV SUD Certif. No. B 031023 0138 Rev. 00
(alternative)	Asia Vital Components Co., Ltd.	DAZA0410R2H-016	12 Vdc, 60 mA, 4500 RPM, 5.72 CFM	EN 62368-1:2014+A11:2017	TUV SUD Certif. No. B 025730 0883 Rev. 13
(alternative)	Dongguan Protechnic Electric Co., Ltd.	MGA4012SB-O10	12 Vdc, 60 mA, 5200 RPM, 6.07 CFM	EN 62368-1:2014+A11:2017	TUV SUD Certif. No. B 031023 0138 Rev. 00
(alternative)	Asia Vital Components Co., Ltd.	DAZA0410B2H-022	12 Vdc, 60 mA, 5000 RPM, 6.89 CFM	EN 62368-1:2014+A11:2017	TUV SUD Certif. No. B 025730 0883 Rev. 13
(alternative)	Yen Sun Technology Corp.	FD124010LB(2N3)	12 Vdc, 90 mA, 4500RPM, 4.5 CFM	EN 62368-1:2014	TUV R 50027591
IC chip (UL3, UL4)	Joulwatt	JW7115S-2SOTA#TRPBF	Input: 2.7 - 5.5 Vd.c.; Max. 3.0 A; Output: -0.3 - 6.5 Vd.c.; Max. 3.2A; 85°C, Class III	IEC 62368-1:2014	UL certificate No. DK-90295-UL
(alternative)	Richtek	RT9742..G.	Input: 2.7 - 6Vd.c.; Max. 2.5 A; Output: -0.3 - 6.5 Vd.c.; Max. 4.5A; 85°C, Class III	IEC 62368-1:2014	Nemko certificate No. NO109777
(alternative)	Joulwatt	JW7115S-1SOTA#TRPBF	Input: 2.7 - 5.5 Vd.c.; Max. 3.0 A; Output: -0.3 - 6.5 Vd.c.; Max. 3.2A; 85°C, Class III	IEC 62368-1:2014	UL certificate No. DK-92033-UL

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
IC Overcurrent Protector (For USB2.0/ USB3.0)	DIODES INC	AP2822CKBTR-G1	Input voltage: 2.7-5.5Vdc Rated output: 1A. 85°C, Class III	IEC 62368-1:2014	UL certificate No. US-34501-UL
(alternative)	DIODES INC	AP22816AKBWT-7	Input voltage: 2.7-5.5Vdc Rated output: 1A. 85°C, Class III	IEC 62368-1:2014	UL certificate No. US-38695-UL
(alternative)	DIODES INC	AP2822GKBTR-G1	Input voltage: 2.7-5.5Vdc Rated output: 2A. 85°C, Class III	IEC 62368-1:2014	UL certificate No. US-34501-UL
(alternative)	DIODES INC	AP22818AKBWT-7	Input voltage: 2.7-5.5Vdc Rated output: 2A. 85°C, Class III	IEC 62368-1:2014	UL certificate No. US-38695-UL
(alternative)	Richtek Technology Corp.	RT9742MGJ5	Input voltage: 2.7-6Vdc Rated output: 1.5A. 85°C, Class III	IEC 62368-1:2014	Nemko certificate No. NO109777
(alternative)	Richtek Technology Corp.	RT9742CGJ5F	Input voltage: 2.7-6Vdc Rated output: 2A. 85°C, Class III	IEC 62368-1:2014	Nemko certificate No. NO109777
(alternative)	Richtek Technology Corp.	RT9742GGJ5F	Input voltage: 2.7-6Vdc Rated output: 1A. 85°C, Class III	IEC 62368-1:2014	Nemko certificate No. NO109777
(alternative)	Richtek Technology Corp.	RT9742VGJ5	Input voltage: 2.7-6Vdc Rated output: 2A. 85°C, Class III	IEC 62368-1:2014	Nemko certificate No. NO109777
(alternative)	JOULWATT TECHNOLOGY CO LIMITED	JW7115S-1SOTA#TRPBF	Input: 2.7 - 5.5 Vd.c.; Rated output: 1A. 85°C, Class III	IEC 62368-1:2014	UL certificate No. DK-92033-UL
(alternative)	JOULWATT TECHNOLOGY CO LIMITED	JW7115S-2SOTA#TRPBF	Input: 2.7 - 5.5 Vd.c.; Rated output: 2.05A. 85°C, Class III	IEC 62368-1:2014	UL certificate No. DK-90295-UL

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
(alternative)	Sg Micro Corp	SGM2580CYN5G/TR	Input: 2.5 - 5.5 Vd.c.; Output: 2.1A. Max. 85°C, Class III	IEC 62368-1:2014	SGS certificate No. BE-38642/M1
(alternative)	Sg Micro Corp	SGM2584AYN5G/TR	Input: 2.5 - 5.5 Vd.c.; Output: 1A. Max. 85°C, Class III	IEC 62368-1:2018	SGS certificate No. BE-39069
(alternative)	Sg Micro Corp	SGM2588AYN5G/TR	Input: 2.5 - 5.5 Vd.c.; Output: 1.1A. Max. 85°C, Class III	IEC 62368-1:2014	SGS certificate No. BE-38642/M1
(alternative)	Sg Micro Corp	SGM2588GYN5G/TR	Input: 2.5 - 5.5 Vd.c.; Output: 1.1A. Max. 85°C, Class III	IEC 62368-1:2014	SGS certificate No. BE-38642/M1
(alternative)	Shenzhen Lowpower Semiconductor CO., Ltd	LPW5202SDB5F1	Input: 2.4 - 6.0 Vd.c.; Output: 1.35A. Max. 85°C, Class III	IEC 62368-1:2018	TUV Rheinland certificate No. JPTUV-141625
Polymeric Thermistors (For USB2.0/USB3.0/HDMI)	CYG Wayon Circuit Protection Co., Ltd.	LP-ISML200	Max. Non-tripping Current 2.0A, Tripping Current 4.0A, Maximum Voltage: 8VDC 85°C, Class III	EN 62319-1:2005 EN 62319-1-1:2005 Comply with clauses 15, 17, J15 and J17 of IEC 60730-1:2013	TUV Rheinland certificate No. R50318402 0001
(alternative)	CYG Wayon Circuit Protection Co., Ltd.	LP-ISML110	Max. Non-tripping Current 1.1A, Tripping Current 2.2A, Maximum Voltage: 8VDC 85°C, Class III	EN 62319-1:2005 EN 62319-1-1:2005 Comply with clauses 15, 17, J15 and J17 of IEC 60730-1:2013	TUV Rheinland certificate No. R50318402 0001
Polymeric Thermistors (For HDMI and front panel control circuit)	CYG Wayon Circuit Protection Co., Ltd.	LP-TSM020	Max. Non-tripping Current 0.2A, Tripping Current 0.5A, Maximum Voltage: 9VDC 85°C, Class III	EN 62319-1:2005 EN 62319-1-1:2005 Comply with clauses 15, 17, J15 and J17 of IEC 60730-1:2013	TUV Rheinland certificate No. R50318402 0001

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Clause	Requirement + Test			Result - Remark	Verdict
(alternative)	Polytronics Technology Corp.	SMD0603P020TF	Max. Non-tripping Current 0.2A, Tripping Current 0.5A, Maximum Voltage: 9VDC 85°C, Class III	EN 62319-1-1:2005 IEC 62319-1-1:2005 EN 62319-1:2005 IEC 62319-1:2005 Comply with clauses 15, 17, J15 and J17 of EN 60730-1:2010	TUV Rheinland certificate No. R50099121 0070
Flexible cables	LINOYA ELECTRONIC TECHNOLOGY CO LTD	H05VV-F	3 x 0,75 mm <sup>2</sup>	DIN EN 50525-2-11 (VDE 0285-525-2-11):2012-01; EN 50525-2-11:2011	VDE 40035072
(alternative)	Hangzhou Hongshi Electrical Ltd.	H05VV-F	3 x 0,75 mm <sup>2</sup>	DIN EN 50525-2-11 (VDE 0285-525-2-11):2012-01; EN 50525-2-11:2011	VDE 40010839
(alternative)	Phino Electric Co.,Ltd	H05VV-F	3 x 0,75 mm <sup>2</sup>	DIN EN 50525-2-11(VDE 0285-525-2-11):2012-01; EN 50525-2-11:2011	VDE 113841
(alternative)	Interchangeable	--	3 x 0,75 mm <sup>2</sup> , 6A 250V~	DIN EN 50525-2-11(VDE 0285-525-2-11):2012-01;EN 50525-2-11:2011	--
Appliance couplers (Connector, non-rewirable)	LINOYA ELECTRONIC TECHNOLOGY CO LTD	XYC-03	10A 250V~	DIN EN 60320-1 (VDE 0625-1):2016-04; EN 60320-1:2015 + AC:2016 IEC 60320-1:2015	VDE 40016051
(alternative)	Phino Electric Co., Ltd	PHS 301	10A 250V~	IEC 60320-1:2015 DIN EN 60320-1 (VDE 0625-1):2016-04; EN 60320-1:2015 + AC:2016	VDE 40038017
(alternative)	Interchangeable	--	10A 250V~	IEC 60320-1:2015 DIN EN 60320-1 (VDE 0625-1):2016-04; EN 60320-1:2015 + AC:2016	--
Plug	LINOYA ELECTRONIC TECHNOLOGY CO LTD	XYP-02L	16A 250V~	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 40015292



IEC 62368-1					
Clause	Requirement + Test			Result - Remark	Verdict
(alternative)	Hangzhou Hongshi Electrical Ltd.	SW102	16A 250V~	DIN VDE 0620-2-1/A1 (VDE 0620-2-1/A1):2017-09 DIN VDE 0620-2-1 (VDE 0620-2-1):2016-01	VDE 40004330
(alternative)	Phino Electric Co.,Ltd.	PHP-206	16A 250V~	DIN VDE 0620-2-1/A1 (VDE 0620-2-1/A1):2017-09 DIN VDE 0620-2-1 (VDE 0620-2-1):2016-01	VDE 40013375
(alternative)	Interchangeable	--	16A 250V~	DIN VDE 0620-2-1/A1 (VDE 0620-2-1/A1):2017-09 DIN VDE 0620-2-1 (VDE 0620-2-1):2016-01	--
Supplementary information: 1) Provided evidence ensures the agreed level of compliance. See OD-CB2039. 2) License available upon request					

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.8.4, 4.8.5	<b>TABLE: Lithium coin/button cell batteries mechanical tests</b>		N/A
(The following mechanical tests are conducted in the sequence noted.)			
4.8.4.2	<b>TABLE: Stress Relief test</b>		—
	Part	Material	Oven Temperature (°C)
4.8.4.3	<b>TABLE: Battery replacement test</b>		—
	Battery part no. ....:		—
	Battery Installation/withdrawal	Battery Installation/Removal Cycle	Comments
		1	
		2	
		3	
		4	
		5	
		6	
		8	
		9	
		10	
4.8.4.4	<b>TABLE: Drop test</b>		—
	Impact Area	Drop Distance	Drop No.
			1
			2
			3
4.8.4.5	<b>TABLE: Impact</b>		—
	Impacts per surface	Surface tested	Impact energy (Nm)
4.8.4.6	<b>TABLE: Crush test</b>		—
	Test position	Surface tested	Crushing Force (N)
			Duration force applied (s)
Supplementary information:			

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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	
1	100-240V~ (Powered by Switching power supply)	EUT Input	Normal	240Vrms	--	--	ES3
			Abnormal	240Vrms	--	--	
			Single fault – SC/OC	240Vrms	--	--	
2	100-240V~ (Powered by Switching power supply)	USB port	Normal	5 Vdc	--	--	ES1
			Abnormal	5 Vdc	--	--	
			Single fault – SC/OC	5 Vdc	--	--	
3	100-240V~ (Powered by Switching power supply)	PoE port	Normal	52 Vdc	--	--	ES1
			Abnormal	52 Vdc	--	--	
			Single fault – SC/OC	52 Vdc	--	--	

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	--	--	--	

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

## 5.2.2.5 - Repetitive Pulses

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

Test Conditions:

Normal –

Abnormal -

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

5.4.1.4, 6.3.2, 9.0, B.2.6	TABLE: Temperature measurements					P
	Supply voltage (V) ..... :	90V/60Hz		264V/50Hz		—
	Ambient T <sub>min</sub> (°C) ..... :	--		--		—
	Ambient T <sub>max</sub> (°C) ..... :	--		--		—
	T <sub>ma</sub> (°C) ..... :	See below		See below		—
Maximum measured temperature T of part/at:		T (°C)				Allowed T <sub>max</sub> (°C)
PCB near UM2		41.3	72.9	44.4	74.8	130
PCB near L3		41.1	72.7	43.3	73.7	130
Plastic enclosure(internal)		29.5	61.1	32.6	63.0	Ref.
PCB near CV108		42.1	73.7	46.1	76.5	130
BAT		29.3	60.9	32.2	62.6	100
PCB near UN1M1		46.4	78.0	46.0	76.4	130
PCB near CL2		48.4	80.0	45.6	76.0	130
C802		41.6	73.2	44.2	74.6	105
T1 coil		56.6	88.2	56.8	87.2	90 <sup>1)</sup>
T1 core		51.8	83.4	52.1	82.5	90 <sup>1)</sup>
C917		39.8	71.4	43.4	73.8	105
GT1		39.9	71.5	43.4	73.8	80
AC Inlet		36.7	68.3	39.5	69.9	80
T2 core		44.3	75.9	47.7	78.1	90 <sup>1)</sup>
T2 coil		45.0	76.6	48.5	78.9	90 <sup>1)</sup>
CX1		41.9	73.5	44.9	75.3	105
Ambient		23.4	→55.0	24.6	→55.0	--
Following for accessible touch temperature:						
Plastic enclosure		28.0	29.6	30.8	31.2	77 <sup>2)</sup>

IEC 62368-1							
Clause	Requirement + Test		Result - Remark		Verdict		
Metal enclosure	32.5	34.1	34.7	35.1	60 <sup>2)</sup>		
Ambient	23.4	→25.0	24.6	→25.0	--		
Supplementary information:							
1) Thermocouple method was used to measure the winding, the limit value is reduced by 10 K							
2) touch temperature limit under normal operating conditions for TS1 (> 1s~< 10s)							
Test with power supply KSA-300S2.							
Temperature T of winding:	t <sub>1</sub> (°C)	R <sub>1</sub> (Ω)	t <sub>2</sub> (°C)	R <sub>2</sub> (Ω)	T (°C)	Allowed T <sub>max</sub> (°C)	Insulation class
--	--	--	--	--	--	--	--
Supplementary information:							
Supplementary information:							
Note 1: Tma should be considered as directed by applicable requirement							
Note 2: Tma is not included in assessment of Touch Temperatures (Clause 9)							

5.4.1.4, 6.3.2, 9.0, B.2.6	TABLE: Temperature measurements					P
	Supply voltage (V) .....:	90V/60Hz		264V/50Hz		—
	Ambient T <sub>min</sub> (°C) .....:	--		--		—
	Ambient T <sub>max</sub> (°C) .....:	--		--		—
	T <sub>ma</sub> (°C) .....:	See below		See below		—
Maximum measured temperature T of part/at:		T (°C)				Allowed T <sub>max</sub> (°C)
PCB near BD1		60.7	93.1	45.5	79.4	130
PCB near L801		27.2	59.6	25.3	59.3	130
PCB near CPU(80420-P)		48.6	81.0	47.3	81.2	130
BAT		42.0	74.3	40.8	74.8	100
PCB near pow1(81081)		30.3	62.6	28.9	62.9	130
C801		40.2	72.6	35.8	69.7	85
T501 coil		49.8	82.2	48.3	82.3	90 <sup>1)</sup>
T501 core		56.5	88.9	54.7	88.6	90 <sup>1)</sup>
T901 coil		35.8	65.0	34.2	68.2	90 <sup>1)</sup>
T901 core		32.7	68.2	30.9	64.9	90 <sup>1)</sup>
AC Inlet		31.7	64.1	28.8	62.7	70
FL1 coil		60.1	92.4	50.6	84.5	105 <sup>1)</sup>
CX1		53.2	85.6	49.3	83.3	100
Ambient		22.6	→55.0	21.0	→55.0	--
Following for accessible touch temperature:						
Plastic enclosure		24.3	26.7	22.7	26.7	77 <sup>2)</sup>
Metal enclosure		32.6	35.0	31.1	35.1	60 <sup>2)</sup>
Ambient		22.6	→25.0	21.0	→25.0	--

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Clause	Requirement + Test	Result - Remark	Verdict

## Supplementary information:

<sup>1)</sup> Thermocouple method was used to measure the winding, the limit value is reduced by 10 K

<sup>2)</sup> touch temperature limit under normal operating conditions for TS1 ( $> 1s \sim < 10s$ )

Test with power supply DPS-280AB-4A.

Temperature T of winding:	t <sub>1</sub> (°C)	R <sub>1</sub> (Ω)	t <sub>2</sub> (°C)	R <sub>2</sub> (Ω)	T (°C)	Allowed T <sub>max</sub> (°C)	Insulation class
--	--	--	--	--	--	--	--

## Supplementary information:

## Supplementary information:

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

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

5.4.1.4, 6.3.2, 9.0, B.2.6	TABLE: Temperature measurements					P
	Supply voltage (V) .....:	90V/60Hz		264V/50Hz		—
	Ambient T <sub>min</sub> (°C) .....:	--		--		—
	Ambient T <sub>max</sub> (°C) .....:	--		--		—
	T <sub>ma</sub> (°C) .....:	See below		See below		—
Maximum measured temperature T of part/at:		T (°C)				Allowed T <sub>max</sub> (°C)
PCB near BD1		63.8	95.5	48.2	79.9	130
PCB near L801		37.7	69.4	37.3	69.0	130
C801		34.6	66.3	33.9	65.6	85
T501 core		54.1	85.8	53.6	85.3	90
T501 coil		56.8	88.5	56.1	87.8	90
T901 coil		39.0	70.7	39.6	71.3	90
T901 core		36.1	67.8	36.8	68.5	90
FL1 coil		57.5	89.2	48.0	79.7	90
CX1		45.5	77.2	44.7	76.4	100
PCB near CPU(80420)		51.4	83.1	52.4	84.1	130
BAT		42.6	74.3	42.7	74.4	Ref.
PCB near POW(81081)		28.9	60.6	29.0	60.7	130
PCB near U1(8459)		32.5	64.2	33.4	65.1	130
Plastic enclosure inside		26.5	58.2	26.6	58.3	60
HDD		33.5	65.2	34.0	65.7	Ref.
Ambient		23.3	→55	23.3	→55	--
Following for accessible touch temperature:						
Plastic enclosure		25.2	26.9	25.1	26.8	77 <sup>2)</sup>
Metal enclosure		30.0	31.7	30.2	31.9	60 <sup>2)</sup>

IEC 62368-1							
Clause	Requirement + Test			Result - Remark		Verdict	
AC Inlet	32.9	34.6	32.6	34.3	77 <sup>2)</sup>		
Ambient	23.3	→25.0	23.3	→25.0	--		
Supplementary information:							
1) Thermocouple method was used to measure the winding, the limit value is reduced by 10 K							
2) touch temperature limit under normal operating conditions for TS1 (> 1s~< 10s)							
Test with power supply HDZ2802-3A S2.							
Temperature T of winding:	t <sub>1</sub> (°C)	R <sub>1</sub> (Ω)	t <sub>2</sub> (°C)	R <sub>2</sub> (Ω)	T (°C)	Allowed T <sub>max</sub> (°C)	Insulation class
--	--	--	--	--	--	--	--
Supplementary information:							
Note 1: Tma should be considered as directed by applicable requirement							
Note 2: Tma is not included in assessment of Touch Temperatures (Clause 9)							
Note 3: Test on model: DS-7616NI-M2/16P							

5.4.1.4, 6.3.2, 9.0, B.2.6	TABLE: Temperature measurements				P	
	Supply voltage (V) ..... :	90V/60Hz		264V/50Hz	—	
	Ambient T <sub>min</sub> (°C) ..... :	--		--	—	
	Ambient T <sub>max</sub> (°C) ..... :	--		--	—	
	Tma (°C) ..... :	See below		See below	—	
Maximum measured temperature T of part/at:		T (°C)				Allowed T <sub>max</sub> (°C)
PCB near BD1		77.9	110.7	54.4	87.1	130
PCB near L801		45.3	78.2	41.2	73.9	130
C801		37.0	69.9	34.5	67.2	85
T501 core		49.6	82.5	48.6	81.3	110
T501 coil		55.1	88.0	54.1	86.8	110
T901 coil		43.7	76.6	42.0	74.7	110
T901 core		39.0	71.9	37.4	70.1	110
FL1 coil		60.0	92.9	47.5	80.2	110
CX1		49.1	81.9	46.9	79.6	100
PCB near U1(80531)		53.0	85.9	51.8	84.5	130
BAT		39.9	72.8	38.6	71.3	Ref.
PCB near LED(82101_P)		32.1	65.0	31.6	64.3	130
SSD		31.8	64.7	31.3	64.0	130
PCB near HDD		37.1	70.0	36.6	69.3	130
PCB near U2(81239)		31.6	64.5	31.6	64.3	130
Plastic enclosure inside		28.1	61.0	28.0	60.7	Ref.

IEC 62368-1							
Clause	Requirement + Test		Result - Remark		Verdict		
Ambient	22.1	→55	22.3	→55	--		
Following for accessible touch temperature:							
Plastic enclosure	26.4	29.3	26.9	29.6	77 <sup>1)</sup>		
Metal enclosure	31.3	34.2	30.7	33.4	60 <sup>1)</sup>		
AC inlet	32.7	35.6	30.1	32.8	77 <sup>1)</sup>		
Ambient	22.1	→25.0	22.3	→25.0	--		
Supplementary information:							
1) Thermocouple method was used to measure the winding, the limit value is reduced by 10 K							
2) touch temperature limit under normal operating conditions for TS1 (> 1s~< 10s)							
Temperature T of winding:	t <sub>1</sub> (°C)	R <sub>1</sub> (Ω)	t <sub>2</sub> (°C)	R <sub>2</sub> (Ω)	T (°C)	Allowed T <sub>max</sub> (°C)	Insulation class
--	--	--	--	--	--	--	--
Supplementary information:							
Note 1: Tma should be considered as directed by applicable requirement							
Note 2: Tma is not included in assessment of Touch Temperatures (Clause 9)							
Note 3: Test on mainboard model: DS-80531(model:DS-7616NI-K2/16P/4G)							

5.4.1.4, 6.3.2, 9.0, B.2.6	TABLE: Temperature measurements				P
	Supply voltage (V) .....	90V/60Hz	264V/50Hz	—	—
	Ambient T <sub>min</sub> (°C) .....	--	--	—	—
	Ambient T <sub>max</sub> (°C) .....	--	--	—	—
	Tma (°C) .....	See below	See below	—	—
Maximum measured temperature T of part/at:		T (°C)			Allowed T <sub>max</sub> (°C)
Primary wire	26.9	58.4	25.2	55.9	80
TVS1 body	50.0	81.5	47.9	78.7	85
CX1	46.0	77.5	43.9	74.7	100
LF2 coil	64.4	95.9	49.2	80.0	110
PCB near Q1(Power board)	64.3	95.8	51.7	82.5	130
T1 coil	65.1	96.6	64.3	95.0	110
T2 coil	57.0	88.5	56.2	86.9	110
T2 core	43.7	75.2	44.7	75.5	110
T3 coil	52.7	84.2	49.9	80.7	110
T3 core	64.5	96.0	59.4	90.1	110
IC1 body	62.8	94.3	62.1	92.8	100
CY3 body	62.1	93.7	62.5	93.2	125
Mylar body	39.5	71.0	38.2	68.9	105
PCB near (DS-8459)	39.6	71.1	37.7	68.4	130



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Clause	Requirement + Test		Result - Remark		Verdict		
PCB near UM3(DS-80500_P)	52.5	84.1	50.7	81.4	130		
Battery1	50.6	82.1	48.9	79.7	Ref.		
PCB near (DS-8281)	47.1	78.6	46.0	76.7	130		
PCB near JP3(DS-81183)	37.2	68.7	33.7	64.5	130		
PCB near U1(DS-81201)	45.4	76.9	45.5	76.3	130		
Plastic enclosure inside	34.8	66.3	35.4	66.1	Ref.		
Ambient	23.5	→55	24.3	→55	--		
Following for accessible touch temperature:							
AC Inlet	38.4	39.9	37.3	38.1	77 <sup>1)</sup>		
Plastic enclosure outside	29.6	31.1	31.1	31.9	77 <sup>1)</sup>		
Metal enclosure	33.9	35.5	34.4	35.1	60 <sup>1)</sup>		
Ambient	23.5	→25.0	24.3	→25.0	--		
Supplementary information:							
1) Thermocouple method was used to measure the winding, the limit value is reduced by 10 K							
2) touch temperature limit under normal operating conditions for TS1 (> 1s~< 10s)							
Temperature T of winding:	t <sub>1</sub> (°C)	R <sub>1</sub> (Ω)	t <sub>2</sub> (°C)	R <sub>2</sub> (Ω)	T (°C)	Allowed T <sub>max</sub> (°C)	Insulation class
--	--	--	--	--	--	--	--
Supplementary information:							
Note 1: Tma should be considered as directed by applicable requirement							
Note 2: Tma is not included in assessment of Touch Temperatures (Clause 9)							
Note 3: Test on mainboard model: DS-80500(model: iDS-7616NXI-M2/16P/X)							

5.4.1.4, 6.3.2, 9.0, B.2.6	TABLE: Temperature measurements				P	
	Supply voltage (V) .....:	90V/60Hz		264V/50Hz	—	
	Ambient T <sub>min</sub> (°C) .....:	--		--	—	
	Ambient T <sub>max</sub> (°C) .....:	--		--	—	
	T <sub>ma</sub> (°C) .....:	See below		See below	—	
Maximum measured temperature T of part/at:		T (°C)				Allowed T <sub>max</sub> (°C)
AC inlet(inside)		33.3	65.7	30.5	63.1	80
PCB near MOV1		44.1	76.5	40.9	73.5	130
CX2 body		50.0	82.4	42.2	74.8	105
LF2 body		61.6	94.0	43.9	76.5	110
PCB under BD1		69.3	101.7	49.6	82.2	130
L1 coil		69.3	101.7	51.0	83.6	110
C2 body		39.7	72.1	36.6	69.2	105

IEC 62368-1							
Clause	Requirement + Test			Result - Remark			Verdict
PCB under Q3	46.0	78.4	44.9	77.5	130		
T1 coil	63.6	96.0	63.1	95.7	110		
T1 core	60.3	92.7	51.9	84.5	110		
PCB near IC302	46.1	78.5	46.3	78.9	130		
Mylar sheet near T1	41.4	73.8	37.6	70.2	Ref.		
CY5	40.0	72.4	38.3	70.9	105		
CX3	43.8	76.2	38.2	70.8	105		
PCB near CN1	41.0	73.4	37.1	69.7	130		
PCB near IC305	33.1	65.5	41.2	73.8	130		
L401 coil	39.1	71.5	38.9	71.5	110		
C426 body	33.9	66.3	33.3	65.9	105		
PCB near UR1(DS-8459)	34.3	66.7	33.1	65.7	130		
PCB near U1(DS-80545)	41.5	73.9	41.5	74.1	130		
Battery body	40.5	72.9	40.1	72.7	Ref.		
PCB near D1(DS-81081)	31.0	63.4	32.4	65.0	130		
HDD	39.2	71.6	36.2	68.8	Ref.		
Plastic enclosure(internal)	28.2	60.6	29.0	61.6	Ref.		
Ambient	22.6	→55	24.3	→55	--		
Following for accessible touch temperature:							
Input wire	37.4	39.8	34.3	36.9	77 <sup>1)</sup>		
AC inlet(outside)	30.0	32.4	28	30.6	77 <sup>1)</sup>		
Plastic enclosure outside	26.1	28.5	26.7	29.3	77 <sup>1)</sup>		
Metal enclosure	34.6	37.0	36.1	38.7	60 <sup>1)</sup>		
Ambient	22.6	→25.0	24.3	→25.0	--		
Supplementary information:							
<sup>1)</sup> Thermocouple method was used to measure the winding, the limit value is reduced by 10 K <sup>2)</sup> touch temperature limit under normal operating conditions for TS1 (> 1s~< 10s)							
Temperature T of winding:	t <sub>1</sub> (°C)	R <sub>1</sub> (Ω)	t <sub>2</sub> (°C)	R <sub>2</sub> (Ω)	T (°C)	Allowed T <sub>max</sub> (°C)	Insulation class
--	--	--	--	--	--	--	--
Supplementary information:							
Note 1: T <sub>ma</sub> should be considered as directed by applicable requirement Note 2: T <sub>ma</sub> is not included in assessment of Touch Temperatures (Clause 9) Note 3: Test on mainboard model: DS-80545 (model: DS-7632NI-K2/16P)							

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Clause	Requirement + Test	Result - Remark	Verdict

5.4.1.4, 6.3.2, 9.0, B.2.6	TABLE: Temperature measurements							P
	Supply voltage (V) ..... :			90V/60Hz		264V/50Hz		—
	Ambient T <sub>min</sub> (°C) ..... :			--		--		—
	Ambient T <sub>max</sub> (°C) ..... :			--		--		—
	Tma (°C) ..... :			--		--		—
Maximum measured temperature T of part/at:				T (°C)				Allowed T <sub>max</sub> (°C)
PCB(8459 V3.0) near UR1				36.4	66.5	34.8	64.8	130
RTC Body				41.5	71.6	39.8	69.8	Ref.
PCB(80572 V1.0) near U1				53.0	83.1	51.0	81.0	130
PCB(81183 V3.0) near JP3				29.0	59.1	27.3	57.3	130
PCB(81201 V2.1) near U1				39.1	69.2	37.6	67.6	130
plastic enclosure inside				28.8	58.9	29.0	59.0	Ref.
Ambient				24.9	→55	25.0	→55	--
Following for accessible touch temperature:								
plastic enclosure outside				26.9	27.3	27.7	--	77 <sup>1)</sup>
metal enclosure				39.2	39.6	36.5	--	60 <sup>1)</sup>
Ambient				24.6	→25.0	25.0	--	--
Temperature T of winding:		t <sub>1</sub> (°C)	R <sub>1</sub> (Ω)	t <sub>2</sub> (°C)	R <sub>2</sub> (Ω)	T (°C)	Allowed T <sub>max</sub> (°C)	Insulation class
Supplementary information:								
Note 1: Tma should be considered as directed by applicable requirement								
Note 2: Tma is not included in assessment of Touch Temperatures (Clause 9)								
1) touch temperature limit under normal operating conditions for TS1 (> 1s~< 10s)								
1. All values for T(°C) are re-calculated from Tamb respectively.								
2. Tested on mainboard: DS-80572.								

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Clause	Requirement + Test	Result - Remark	Verdict

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

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

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

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Clause	Requirement + Test	Result - Remark	Verdict

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

5.4.2.4	<b>TABLE: Clearances based on electric strength test</b>			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	<b>TABLE: Distance through insulation measurements</b>					N/A
Distance through insulation di at/of:		Peak voltage (V)	Frequency (kHz)	Material	Required DTI (mm)	DTI (mm)
Supplementary information:						

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Clause	Requirement + Test	Result - Remark	Verdict

<b>5.4.9</b>	<b>TABLE: Electric strength tests</b>			<b>P</b>
Test voltage applied between:		Voltage shape (AC, DC)	Test voltage (V)	Breakdown Yes / No
Basic/supplementary:				
LN-metal enclosure		DC	2500	No
Reinforced:				
LN-terminal		DC	4000	No
Supplementary information:				
Certified PSU used.				

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: [ ] 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 the approved power supply unit						

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Clause	Requirement + Test	Result - Remark	Verdict

<b>5.6.6.2</b>	<b>TABLE: Resistance of protective conductors and terminations</b>				<b>P</b>
Accessible part	Test current (A)	Duration (min)	Voltage drop (V)	Resistance ( $\Omega$ )	
Metal enclosure to inlet protective earthing conductor	32	2	0.48	0.012	
Metal enclosure to inlet protective earthing conductor	40	2	0.29	0.009	
Supplementary information:					
Certified PSU used.					

5.7.2.2, 5.7.4	TABLE: Earthed accessible conductive part		P
Supply voltage ..... :		—	
Location	Test conditions specified in 6.1 of IEC 60990 or Fault Condition No in IEC 60990 clause 6.2.2.1 through 6.2.2.8, except for 6.2.2.7	Touch current (mA)	
Metal enclosure	1	0.76	
	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.			

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Clause	Requirement + Test	Result - Remark	Verdict

6.2.2	Table: Electrical power sources (PS) measurements for classification					P
Source	Description	Measurement	Max Power after 3 s	Max Power after 5 s <sup>*)</sup>	PS Classification	
EUT Input	Normal	Power (W) :	--	>100	PS3 (declared)	
		V <sub>A</sub> (V) :	--	--		
		I <sub>A</sub> (A) :	--	--		
Supplementary Information:						
(*) Measurement taken only when limits at 3 seconds exceed PS1 limits						

6.2.3.1	Table: Determination of Potential Ignition Sources (Arcing PIS)				N/A
Location		Open circuit voltage After 3 s (V <sub>p</sub> )	Measured r.m.s current (I <sub>rms</sub> )	Calculated value (V <sub>p</sub> x I <sub>rms</sub> )	Arcing PIS? Yes / No
Supplementary information:					
An Arcing PIS requires a minimum of 50 V (peak) a.c. or d.c. An Arcing PIS is established when the product of the open circuit voltage (V <sub>p</sub> ) and normal operating condition rms current (I <sub>rms</sub> ) is greater than 15.					



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Clause	Requirement + Test	Result - Remark	Verdict

<b>6.2.3.2</b>	<b>Table: Determination of Potential Ignition Sources (Resistive PIS)</b>				<b>P</b>
Circuit Location (x-y)	Operating Condition (Normal / Describe Single Fault)	Measured wattage or VA During first 30 s (W / VA)	Measured wattage or VA After 30 s (W / VA)	Protective Circuit, Regulator, or PTC Operated? Yes / No (Comment)	Resistive PIS? Yes/No
All components	--	--	--	--	Yes
Supplementary Information:					
<p>A combination of voltmeter, VA and ammeter IA may be used instead of a wattmeter.</p> <p>If a separate voltmeter and ammeter are used, the product of (VA x IA) is used to determine Resistive PIS classification.</p> <p>A Resistive PIS: (a) dissipates more than 15 W, measured after 30 s of normal operation, <u>or</u> (b) under single fault conditions has either a power exceeding 100 W measured immediately after the introduction of the fault if electronic circuits, regulators or PTC devices are used, or has an available power exceeding 15 W measured 30 s after introduction of the fault.</p>					

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:			

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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
90	50	2.21	--	196.8	--	F1	2.21	Max normal work
90	60	2.20	--	196.8	--	F1	2.20	Max normal work
100	50	1.97	3.2	194.6	--	F1	1.97	Max normal work
100	60	1.96	3.2	194.6	--	F1	1.96	Max normal work
240	50	0.82	3.2	187.1	--	F1	0.82	Max normal work
240	60	0.83	3.2	187.2	--	F1	0.83	Max normal work
264	50	0.77	--	187.2	--	F1	0.77	Max normal work
264	60	0.78	--	188.1	--	F1	0.78	Max normal work
Supplementary information:								
Equipment may be have rated current or rated power or both. Both should be measured Test with power supply KSA-300S2.								

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
90	50	3.02	--	270.39	--	F1	3.02	Normal work, POE load 200W
90	60	2.69	3.2	268.41	--	F1	2.69	
100	50	1.09	3.2	252.42	--	F1	1.09	
100	60	1.00	--	252.03	--	F1	1.00	
240	50	2.97	--	267.62	--	F1	2.97	
240	60	2.69	3.2	267.91	--	F1	2.69	
264	50	1.10	3.2	254.01	--	F1	1.10	
264	60	1.01	--	253.45	--	F1	1.01	
Supplementary information:								
Equipment may be have rated current or rated power or both. Both should be measured Test with power supply DPS-280AB-4A.								

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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
90	50	2.25	--	202.29	--	F1	2.25	USB load 0.5A, HDD loaded 8T
100	50	2.04	3.2	201.16	--	F1	2.04	
240	50	0.84	3.2	192.69	--	F1	0.84	
264	50	0.78	--	192.57	--	F1	0.78	
90	60	2.26	--	202.05	--	F1	2.26	
100	60	2.03	3.2	201.00	--	F1	2.03	
240	60	0.85	3.2	193.64	--	F1	0.85	
264	60	0.79	--	192.45	--	F1	0.79	
Supplementary information:								
Equipment may be have rated current or rated power or both. Both should be measured Test on mainboard model: DS-80531.								

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
90	50	3.00	--	267.36	--	F1	3.00	8T HDD*2 USB 2.0 load 0.5A USB 3.0 load 0.9A PoE terminal Total load 200W
100	50	2.68	3.2	265.01	--	F1	2.68	
240	50	1.10	3.2	255.02	--	F1	1.10	
264	50	1.01	--	254.95	--	F1	1.01	
90	60	3.01	--	267.69	--	F1	3.01	
100	60	2.68	3.2	265.03	--	F1	2.68	
240	60	1.10	3.2	255.65	--	F1	1.10	
264	60	1.01	--	255.18	--	F1	1.01	
Supplementary information:								
Equipment may be have rated current or rated power or both. Both should be measured Test on mainboard model: DS-80500.								

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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	
90	50	2.72	--	244.34	--	F1	2.72	8T HDD*2 USB 2.0 load 0.5A USB 3.0 load 0.9A PoE terminal Total load 200W	
100	50	2.43	3.2	242.37	--	F1	2.43		
240	50	1.01	3.2	234.18	--	F1	1.01		
264	50	0.92	--	234.39	--	F1	0.92		
90	60	2.75	--	246.69	--	F1	2.75		
100	60	2.43	3.2	242.43	--	F1	2.43		
240	60	1.01	3.2	235.87	--	F1	1.01		
264	60	0.92	--	234.78	--	F1	0.92		
Supplementary information:									
Equipment may be have rated current or rated power or both. Both should be measured Test on mainboard model: DS-80545.									

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	
90	50	2.67	--	237.56	--	F1	2.67	8T HDD*2 USB 2.0 load 0.5A USB 3.0 load 0.9A PoE terminal Total load 200W	
100	50	2.39	3.2	235.86	--	F1	2.39		
240	50	1.02	3.2	228.93	--	F1	1.02		
264	50	0.95	--	230.39	--	F1	0.95		
90	60	2.71	--	240.91	--	F1	2.71		
100	60	2.41	3.2	238.78	--	F1	2.41		
240	60	1.03	3.2	229.77	--	F1	1.03		
264	60	0.96	--	229.49	--	F1	0.96		
Supplementary information:									
Equipment may be have rated current or rated power or both. Both should be measured Test on mainboard model: DS-80517(with Switching power supply DPS-280AB-8 A).									

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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	
90	50	2.80	--	248.28	--	F1	2.80	8T HDD*2 USB 2.0 load 0.5A USB 3.0 load 0.9A PoE terminal Total load 200W	
100	50	2.46	3.2	245.89	--	F1	2.46		
240	50	1.13	3.2	240.60	--	F1	1.13		
264	50	0.91	--	235.13	--	F1	0.91		
90	60	2.80	--	249.64	--	F1	2.80		
100	60	2.46	3.2	245.16	--	F1	2.46		
240	60	1.13	3.2	236.54	--	F1	1.13		
264	60	0.91	--	236.53	--	F1	0.91		
Supplementary information:									
Equipment may be have rated current or rated power or both. Both should be measured Test on mainboard model: DS-80517(with Switching power supply FLXA2281A).									

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	
90	50	2.73	--	244.96	--	F1	2.73	Max normal work	
90	60	2.76	--	245.90	--	F1	2.76	Max normal work	
100	50	2.43	3.2	242.44	--	F1	2.43	Max normal work	
100	60	2.41	3.2	241.04	--	F1	2.41	Max normal work	
240	50	1.11	3.2	236.97	--	F1	1.11	Max normal work	
240	60	1.11	3.2	232.91	--	F1	1.11	Max normal work	
264	50	0.90	--	231.71	--	F1	0.90	Max normal work	
264	60	0.90	--	232.81	--	F1	0.90	Max normal work	
Supplementary information:									
Equipment may be have rated current or rated power or both. Both should be measured Tested on mainboard: DS-80572.									

B.3		TABLE: Abnormal operating condition tests							P
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IEC 62368-1								
Clause	Requirement + Test				Result - Remark			Verdict
Ambient temperature (°C) .....					23.1			—
Power source for EUT: Manufacturer, model/type, output rating .:					--			—
Component No.	Abnormal Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
Openings	Blocked	264	120 min	F1	0.78	Type T	Max temperature at T501 coil: 68.9 °C, T901 coil: 66.3 °C, metal enclosure: 42.9°C	No fire, no explosion, no emit molten metal, no hazardous
Fan	Locked	264	120 min	F1	0.78	Type T	Max temperature at T501 coil: 73.1 °C, T901 coil: 55.9 °C, metal enclosure: 41.1°C	No fire, no explosion, no emit molten metal, no hazardous
USB port	Overload	264	10 min	F1	--	Type T	--	Unit shutdown, no fire, no explosion, no emit molten metal, no hazardous
USB port	SC	264	10 min	F1	--	Type T	--	Unit shutdown, no fire, no explosion, no emit molten metal, no hazardous
Supplementary information:								
1. Test table is provided to record abnormal and fault conditions for all applicable energy sources including Thermal burn injury. Column “Abnormal/Fault.” Specify if test condition by indicating “Abnormal” then the condition for a Clause B.3 test or “Single Fault” then the condition for Clause B.4. 2. NH = No hazard; NB = No indication of dielectric breakdown; NC = Cheesecloth remained intact; NT = Tissue paper remained intact; NCD = No components damage.								

<b>B.3</b>	<b>TABLE: Abnormal operating condition tests</b>	<b>P</b>
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IEC 62368-1								
Clause	Requirement + Test				Result - Remark			Verdict
Ambient temperature (°C) .....					23.1			—
Power source for EUT: Manufacturer, model/type, output rating ..					--			—
Component No.	Abnormal Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
Openings	Cover	90V,60Hz	2h	F1	3.01	Type T	--	All safeguards remain effective,no damage,no hazards, temperature: T3 core 68.7°C, PCB near UM3(DS-80500_P) 56.9°C, PCB near JP3(DS-81183) 43.0°C.
USB2.0	OL	90V,60Hz	2h	F1	3.01-> 3.05-> 3.08-> 2.97	Type T	--	USB2.0 loaded 0.50A->0.90A->1.32A, until loaded 1.33A USB2.0 shutdown immediately, All safeguards remain effective, no damage, no hazards, temperature: T3 core 65.6°C, PCB near UM3(DS-80500_P) 57.3°C, PCB near JP3(DS-81183) 34.5°C.

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Clause	Requirement + Test				Result - Remark			Verdict
B.3	TABLE: Abnormal operating condition tests							P
Ambient temperature (°C) .....					23.1			—
Power source for EUT: Manufacturer, model/type, output rating ..					--			—
Component No.	Abnormal Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
USB3.0	OL	90V,60Hz	2h	F1	3.01-> 3.07-> 3.15-> 2.94	Type T	--	USB3.0 loaded 0.90A-> 1.60A-> 2.60A,until loaded 2.61A USB3.0 shutdown immediately, All safeguards remain effective, no damage, no hazards, temperature: T1 coil 68.2°C, PCB near UM3(DS-80500_P) 89.0°C, PCB near UM3(DS-80500_P) 57.3°C.
Supplementary information:								
<div>1. Test table is provided to record abnormal and fault conditions for all applicable energy sources including Thermal burn injury. Column “Abnormal/Fault.” Specify if test condition by indicating “Abnormal” then the condition for a Clause B.3 test or “Single Fault” then the condition for Clause B.4.</div> <div>2. NH = No hazard; NB = No indication of dielectric breakdown; NC = Cheesecloth remained intact; NT = Tissue paper remained intact; NCD = No components damage.</div> <div>Test on main board model: DS-80500 (7616NXI-M2/16P/X)</div>								



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

<b>B.3</b>	<b>TABLE: Abnormal operating condition tests</b>							<b>P</b>
Ambient temperature (°C) .....					23.1		—	
Power source for EUT: Manufacturer, model/type, output rating .:					--		—	
Component No.	Abnormal Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
Openings	Cover	90V,60Hz	180 mins	F1	2.75	Type T	--	All safeguards remain effective, no damage, no hazards, temperature: T1 core 65.8°C, PCB near U1(DS-80545) 48.1°C, PCB near D1(DS-81081) 36.3°C.
USB2.0(front)	Over load	90V,60Hz	180 mins	F1	2.75→2.78	Type T	--	All safeguards remain effective, no damage, no hazards, temperature: T1 coil 64.2°C, PCB near IC302 48.9°C.
USB2.0(back)	Over load	90V,60Hz	180 mins	F1	2.75→2.78	Type T	--	All safeguards remain effective, no damage, no hazards, temperature: T1 coil 64.2°C, PCB near IC302 49.2°C. LF2 body 45.6°C
Supplementary information:								
<p>1. Test table is provided to record abnormal and fault conditions for all applicable energy sources including Thermal burn injury. Column "Abnormal/Fault." Specify if test condition by indicating "Abnormal" then the condition for a Clause B.3 test or "Single Fault" then the condition for Clause B.4.</p> <p>2. NH = No hazard; NB = No indication of dielectric breakdown; NC = Cheesecloth remained intact; NT = Tissue paper remained intact; NCD = No components damage.</p> <p>Test on main board model: DS-80545 (DS-7632NI-K2/16P)</p>								

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

<b>B.3</b>	<b>TABLE: Abnormal operating condition tests</b>							<b>P</b>
Ambient temperature (°C) .....					25		—	
Power source for EUT: Manufacturer, model/type, output rating ..					--		—	
Component No.	Abnormal Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
Openings	Cover	90V,60Hz	180 mins	F1	2.71	--	--	All safeguards remain effective,no damage,no hazards, temperature: T501 coil 53°C, L801 coil 46.4°C, L152 coil 44.7°C, PCB near U1(DS-80517_P V1.0) 53.2°C
Fan	Block	90V,60Hz	180 mins	F1	2.71	--	--	Normal work, No damage,no hazard. temperature: T501 coil 51.6°C, L801 coil 36.2°C, L152 coil 43.8°C, PCB near U1(DS-80517_P V1.0) 49.6°C
USB2.0(front)	Over load	90V,60Hz	180 mins	F1	2.73-> 2.75-> 2.77-> 2.70	--	--	USB load 0.6A->1.2A->1.8A-0A. Normal work, No damage,no hazard, temperature: T501 coil 51.4°C, L801 coil 36.4°C, L152 coil 43.8°C, PCB near U1(DS-80517_P V1.0) 51.7°C
Supplementary information:								

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

<b>B.3</b>	<b>TABLE: Abnormal operating condition tests</b>							<b>P</b>
Ambient temperature (°C) .....					25			—
Power source for EUT: Manufacturer, model/type, output rating ..					--			—
Component No.	Abnormal Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
<p>1. Test table is provided to record abnormal and fault conditions for all applicable energy sources including Thermal burn injury. Column "Abnormal/Fault." Specify if test condition by indicating "Abnormal" then the condition for a Clause B.3 test or "Single Fault" then the condition for Clause B.4.</p> <p>2. NH = No hazard; NB = No indication of dielectric breakdown; NC = Cheesecloth remained intact; NT = Tissue paper remained intact; NCD = No components damage.</p> <p>Test on main board model: DS-80517(DPS-280AB-8 A)</p>								

<b>B.3</b>	<b>TABLE: Abnormal operating condition tests</b>							<b>P</b>
Ambient temperature (°C) .....					25			—
Power source for EUT: Manufacturer, model/type, output rating ..					--			—
Component No.	Abnormal Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
Openings	Cover	90V,60Hz	180 mins	F1	2.80	--	--	All safeguards remain effective,no damage,no hazards, temperature: T1 coil 50.6°C, CY2 41.2°C, PCB near CPU(80517) 50.5°C, L3 coil 49.2°C
Fan	Block	90V,60Hz	180 mins	F1	2.80	--	--	Normal work, No damage,no hazard. temperature: T1 coil 46.6°C, CY2 40.8°C, PCB near CPU(80517) 58.5°C, L3 coil 45.7°C

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

B.3	TABLE: Abnormal operating condition tests							P
Ambient temperature (°C) .....					25		—	
Power source for EUT: Manufacturer, model/type, output rating ..					--		—	
Component No.	Abnormal Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
USB2.0	Over load	90V,60Hz	180 mins	F1	2.83-> 2.85-> 2.87-> 2.79	--	--	USB load 0.6A->1.2A->1.8A-0A. Normal work, No damage,no hazard, temperature: T1 coil 50.2°C, CY2 40.1°C, PCB near CPU(80517) 55.4°C, L3 coil 48.7°C
Supplementary information:								
1. Test table is provided to record abnormal and fault conditions for all applicable energy sources including Thermal burn injury. Column “Abnormal/Fault.” Specify if test condition by indicating “Abnormal” then the condition for a Clause B.3 test or “Single Fault” then the condition for Clause B.4. 2. NH = No hazard; NB = No indication of dielectric breakdown; NC = Cheesecloth remained intact; NT = Tissue paper remained intact; NCD = No components damage. Test on main board model: DS-80517(FLXA2281A-G9TA)								

B.3	TABLE: Abnormal operating condition tests							P
Ambient temperature (°C) ..... :					25			—
Power source for EUT: Manufacturer, model/type, output rating .:					--			—
Component No.	Abnormal Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
Openings	Blocked	90V/60Hz	3h	--	2.73	T	--	EUT work normally. PCB(80572 V1.0) near U1: 69.8 °C, Battery: 46.2 °C Metal enclosure: 66.1 °C, Plastic enclosure: 32.2 °C, NH, NCD, NT, NC.

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

B.3		TABLE: Abnormal operating condition tests						P
Ambient temperature (°C) .....					25			—
Power source for EUT: Manufacturer, model/type, output rating ..					--			—
Component No.	Abnormal Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
Front USB	Overload	90V/60Hz	3h	--	2.74-> 2.76-> 2.77-> 2.70	T	--	EUT work normally. Output load to 2.2A. PCB(80572 V1.0) near U1: 50.0 °C, Metal enclosure: 39.7 °C, Plastic enclosure: 27.8 °C, NH, NCD, NT, NC.
Rear USB	Overload	90V/60Hz	3h	--	2.74-> 2.76-> 2.77-> 2.70	T	--	EUT work normally. Output load to 2.2A Key location temperature at Tamb 24.2 °C: PCB(80572 V1.0) near U1: 53.0 °C, Battery: 48.1 °C Metal enclosure: 38.7 °C, Plastic enclosure: 31.3 °C, NH, NCD, NT, NC.

IEC 62368-1								
Clause	Requirement + Test				Result - Remark			Verdict
B.3	TABLE: Abnormal operating condition tests							P
Ambient temperature (°C) .....					25			—
Power source for EUT: Manufacturer, model/type, output rating ..					--			—
Component No.	Abnormal Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
Fan	Blocked	90V/60Hz	3h	--	2.73	--	T	EUT work normally. PCB(80572 V1.0) near U1: 81.7 °C, Battery: 49.1 °C Metal enclosure: 37.2 °C, Plastic enclosure: 33.8 °C, NH, NCD, NT, NC.
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. NH= No hazard, NC = No Cheesecloth remained intact, NT = No Tissue paper remained intact, NCD = No Components damaged. Test on mainboard model: DS-80572								

<b>B.4</b>	<b>TABLE: Fault condition tests</b>							<b>P</b>
Ambient temperature (°C) .....					23.1			—
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
CL2	SC	264	10 min	F1	--	--	--	Unit shutdown, no fire, no explosion, no emit molten metal, no hazardous
TVS40	SC	264	10 min	F1	--	--	--	Unit shutdown, no fire, no explosion, no emit molten metal, no hazardous
Supplementary information:								

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

The most unfavourable test condition was performed

In fault column, where SC = short-circuited.

NH = No hazard; NB = No indication of dielectric breakdown; NC = Cheesecloth remained intact;

NT = Tissue paper remained intact; NCD = No components damage.

Tested on model DS-7616NI-Q2

B.4 TABLE: Fault condition tests								P
Ambient temperature (°C) .....					23.1			—
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
USB2.0	SC	12Vd.c.	10min	--	--	--	--	USB shutdown immediately, No damage,no hazard.
USB3.0	SC	12Vd.c.	10min	--	--	--	--	USB shutdown immediately, No damage,no hazard.
LED (HDD1)	SC	12Vd.c.	10min	--	--	--	--	LED shutdown immediately, No damage,no hazard.
TVS84	SC	12Vd.c.	10min	--	--	--	--	Normal work, No damage,no hazard.
UV12 PIN1-4	SC	12Vd.c.	10min	--	--	--	--	EUT shutdown immediately, No damage,no hazard.
Supplementary information:								
The most unfavourable test condition was performed								
In fault column, where SC = short-circuited.								
NH = No hazard; NB = No indication of dielectric breakdown; NC = Cheesecloth remained intact;								
NT = Tissue paper remained intact; NCD = No components damage.								
Tested on model DS-7632NI-M2								

B.4 TABLE: Fault condition tests								P
Ambient temperature (°C) .....					25			—
Power source for EUT: Manufacturer, model/type, output rating .....					--			—
Component No.	Fault Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
Fans	Block	90V,60Hz	2h	F1	3.01	Type T	--	All safeguards remain effective,no damage,no hazards

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

## Supplementary information:

The most unfavourable test condition was performed

In fault column, where SC = short-circuited.

Test on model: iDS-7616NXI-M2/16P/X(mainboard model: DS-80500)

B.4		TABLE: Fault condition tests							P
Ambient temperature (°C) .....					25				—
Power source for EUT: Manufacturer, model/type, output rating .....					--				—
Component No.	Fault Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation	
Fans	Block	90V,60Hz	180 mins	F1	2.75	Type T	--	All safeguards remain effective,no damage,no hazards	
CV30	SC	264V,60Hz	10min	F1	0.17	Type T	--	EUT shutdown, no damage,no hazard.	
CA47	SC	264V,60Hz	10min	F1	0.31	Type T	--	EUT shutdown, no damage,no hazard.	
C6	SC	264V,60Hz	10min	F1	0.13	Type T	--	EUT shutdown, no damage,no hazard.	
Q31 Pin1-3	SC	264V,60Hz	10min	F1	0.01	Type T	--	EUT shutdown, no damage,no hazard.	
USB2.0 port(Front)	SC	264V,60Hz	10min	F1	2.61	Type T	--	USB Output shutdown, no damage,no hazard.	
USB2.0 port(Back)	SC	264V,60Hz	10min	F1	2.61	Type T	--	USB Output shutdown, no damage,no hazard.	
Supplementary information: The most unfavourable test condition was performed In fault column, where SC = short-circuited. Test on model: DS-7632NI-K2/16P(mainboard Model: DS-80545)									



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

<b>B.4</b>	<b>TABLE: Fault condition tests</b>							<b>P</b>
Ambient temperature (°C) .....					25			—
Power source for EUT: Manufacturer, model/type, output rating .....					--			—
Component No.	Fault Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
LED	SC	90V,60Hz	10min	F1	0.96	--	--	LED shutdown immediately, No damage,no hazard.
C167	SC	264V,60Hz	10min	F1	0.1	--	--	EUT shutdown immediately, No damage,no hazard.
UV4 PIN1-5	SC	264V,60Hz	10min	F1	0.1	--	--	EUT shutdown immediately, No damage,no hazard.
Supplementary information: The most unfavourable test condition was performed In fault column, where SC = short-circuited. Test on mainboard model: DS-80517(with Switching power supply DPS-280AB-8 A).								

<b>B.4</b>	<b>TABLE: Fault condition tests</b>							<b>P</b>
Ambient temperature (°C) .....					25			—
Power source for EUT: Manufacturer, model/type, output rating .....					--			—
Component No.	Fault Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
LED	SC	90V,60Hz	10min	F1	0.91	--	--	LED shutdown immediately, No damage, no hazard.
C167	SC	264V,60Hz	10min	F1	0.1	--	--	EUT shutdown immediately, No damage, no hazard.
UV4 PIN1-5	SC	264V,60Hz	10min	F1	0.1	--	--	EUT shutdown immediately, No damage, no hazard.
Supplementary information: The most unfavourable test condition was performed In fault column, where SC = short-circuited. Test on mainboard model: DS-80517(with Switching power supply FLXA2281A).								

IEC 62368-1								
Clause	Requirement + Test				Result - Remark			Verdict
B.4	TABLE: Fault condition tests							P
Ambient temperature (°C) .....					25			—
Power source for EUT: Manufacturer, model/type, output rating .:					--			—
Component No.	Fault Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
LED	SC	90V/60Hz	10mins	--	0.90	--	--	LED shutdown immediately, No damage,no hazard.
C274	SC	90V/60Hz	10mins	--	0.1	--	--	EUT shutdown immediately, No damage,no hazard.
UV12 PIN1-5	SC	90V/60Hz	10mins	--	0.1	--	--	EUT shutdown immediately, No damage,no hazard.
Supplementary information:								
Test on mainboard model: DS-80572.								

Annex M.3	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?..... :							See below		P
	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.
GUANGDONG TIANQIU ELECTRONICS TECHNOLOGY CO LTD. / CR1220	0.005 mA	--	--	--	--	--	--	--	--

IEC 62368-1									
Clause	Requirement + Test				Result - Remark				Verdict
POWER GLORY BATTERY TECH (SHENZHEN ) CO.,LTD / CR1220	1.8mA D2 SC	--	--	--	--	--	--	--	--
GUANGZHOU TIANQIU ENTERPRISE CO LTD / CR1220	0.002 mA	--	--	--	--	--	--	--	--
GUANGZHOU TIANQIU ENTERPRISE CO LTD / CR1220	1.3 mA D2 SC	--	--	--	--	--	--	--	--
Test results:								Verdict	
- Chemical leaks						No chemical leaks		P	
- Explosion of the battery						No explosion		P	
- Emission of flame or expulsion of molten metal						No emission of flame or expulsion of molten metal		P	
- Electric strength tests of equipment after completion of tests						--		N/A	
Supplementary information:									

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

Annex M.4 Table: Additional safeguards for equipment containing secondary lithium batteries					N/A
Battery/Cell No.	Test conditions	Measurements			Observation
		U	I (A)	Temp (C)	
	Normal				
	Abnormal				
	Single fault –SC/OC				
	Normal				
	Abnormal				
	Single fault – SC/OC				
Supplementary Information:					
Battery identification	Charging at $T_{\text{lowest}}$ (°C)	Observation	Charging at $T_{\text{highest}}$ (°C)	Observation	
Supplementary Information:					

Q.1 TABLE: Circuits intended for interconnection with building wiring (LPS)							P
Output Circuit	Condition	$U_{oc}$ (V)	Time (s)	$I_{sc}$ (A)		S (VA)	
				Meas.	Limit	Meas.	Limit
USB port	Normal	4.98	--	1.51	8	6.99	100
POE port	Normal	52.2	--	0.57	$\leq 19.15$ (1000/52.2)	30.0	$\leq 250$
POE port (QL1M1 pin1-4 SC)	Single fault	52.2	--	1.35	$\leq 19.15$ (1000/52.2)	67.8	$\leq 250$
HDMI	Normal	4.88	--	0	8	0	100
Supplementary Information:							
Tested on model: DS-80517.							

Q.1 TABLE: Circuits intended for interconnection with building wiring (LPS)							P
Output Circuit	Condition	$U_{oc}$ (V)	Time (s)	$I_{sc}$ (A)		S (VA)	
				Meas.	Limit	Meas.	Limit

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Clause	Requirement + Test			Result - Remark			Verdict
PoE port	Normal	52.13	--	0.56	$\leq 2.88$ (150/52.13)	27.64	100
PoE port	QV6 Pin1-4 SC	52.13	--	1.36	$\leq 2.88$ (150/52.13)	68.13	100
USB 2.0 port(Front)	Normal	5.08	--	1.41	8	7.12	100
USB 2.0 port(Back)	Normal	5.08	--	1.37	8	6.95	100
HDMI	Normal	4.95	--	0	8	0	100
AUDIO OUT	Normal	0	--	0	8	0	100
ALARM OUT	Normal	0	--	0	8	0	100
VGA	Normal	0	--	0	8	0	100
LAN	Normal	0	--	0	8	0	100
Supplementary Information:							
Tested on model DS-80500.							

Q.1	TABLE: Circuits intended for interconnection with building wiring (LPS)						P
Output Circuit	Condition	U <sub>oc</sub> (V)	Time (s)	I <sub>sc</sub> (A)		S (VA)	
				Meas.	Limit	Meas.	Limit
front USB 2.0 ports	Normal	5.00	--	2.05	8	9.19	100
front USB 2.0 ports	UL4 PIN1-3 SC	4.98	--	4.10	8	16.44	100
rear USB 2.0 port	Normal	4.98	--	2.10	8	8.84	100
rear USB 2.0 port	UL5 PIN1-3 SC	4.98	--	4.10	8	15.54	100
HDMI	Normal	5.02	--	0	8	0	100
AUDIO OUT	Normal	0	--	0	8	0	100
VGA	Normal	0	--	0	8	0	100
LAN	Normal	0	--	0	8	0	100
ARALM	Normal	0	--	0	8	0	100
Supplementary Information:							
SC=Short circuit, OC=Open circuit Test on main board model: DS-80530							

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

<b>Annex Q.1</b>	<b>TABLE: Circuits intended for interconnection with building wiring (LPS)</b>	<b>P</b>
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Note: Measured UOC (V) with all load circuits disconnected:

Output Circuit	Components	U <sub>oc</sub> (V)	I <sub>sc</sub> (A)		S (VA)	
			Meas.	Limit	Meas.	Limit
USB 2.0 port	Normal	5.04	2.24	8	9.10	100
USB 3.0 port	Normal	5.04	2.26	8	10.22	100
PoE	Normal condition	51.65	0.56	2.90	26.83	100
PoE	QL1M1 Pin1-4 SC	51.65	1.34	2.90	67.71	100
HDMI	Normal	5.02	0	8	0	100
VGA	Normal	0	0	8	0	100
LAN	Normal	0	0	8	0	100
ARALM	Normal	0	0	8	0	100
AUDIO	Normal	0	0	8	0	100
JP3	Normal	5.00	1.47	8	5.12	100
JP8 PIN6-11	Normal	5.03	0.40	8	1.68	100
JP8 PIN8-11	Normal	5.03	0.40	8	1.74	100
JP8 PIN1, 2, 5, 9, 10-11	Normal	2.97	0	8	0	100
JP8 PIN 3, 4, 7-11	Normal	0	0	8	0	100

**Supplementary Information:**

SC=Short circuit, OC=Open circuit  
PTC Chip (UL3, UL4) are certified.  
Test on mainboard model: DS-80572.

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

<b>T.2, T.3, T.4, T.5</b>	<b>TABLE: Steady force test</b>					P
Part/Location	Material	Thickness (mm)	Force (N)	Test Duration (sec)	Observation	
Enclosure (top, bottom, side)	See appended table 4.1.2	See appended table 4.1.2	250	5	No damage, no hazards	
Supplementary information:						

T.6, T.9	TABLE: Impact tests				P
Part/Location	Material	Thickness (mm)	Vertical distance (mm)	Observation	
Enclosure	See appended table 4.1.2	See appended table 4.1.2	1300	No damaged	
Front cover	See appended table 4.1.2	See appended table 4.1.2	1300	No damaged	
Supplementary information:					

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

<b>T.8</b>	<b>TABLE: Stress relief test</b>					P
Part/Location	Material	Thickness (mm)	Oven Temperature (°C)	Duration (h)	Observation	
Front cover	Plastic	See table 4.1.2	73	7	No damaged	
Supplementary information:						

**List of test equipment used:**

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

Instr. Code	Instrument Name	Instrument Type	Instrument I.D.	Series No.	Calibration Date	
					Last	Due
1	Power meter	WT310	hkvs-yq1524	C2QB04042V	07/28/2024	07/27/2025
2	Data Acquisition	Agilent 34972A	hkvs-yq1192	MY49012334	03/07/2024	03/08/2025
3	DC power	Chroma 62006P-300-8	hkvs-qt4267	62006PE00520	03/27/2024	03/28/2025
4	Electronic stopwatch	PC396	hkvs-sys1001	--	12/26/2023	12/27/2024
5	steel ruler	1m	JE-11-03	--	--	--
6	steel ruler	1m	JE-11-04	--	--	--
7	Steel Ball impact test rig	YJ-8625	hkvs-qt3939	--	10/07/2024	10/08/2026
8	test probe	AG-022	hkvs-sys1020	AG-2014042810	06/27/2024	06/26/2026
9	Straight fingers	AG-003	hkvs-sys1014	AG-201404284	06/27/2024	06/26/2026
10	test pin	AG-001	hkvs-sys1015	AG-201404285	06/27/2024	06/26/2026
11	Drop tests wood	--	JP-11-38	--	--	--
12	Test surfaces 100mm×250mm	--	JP-11-39	--	--	--
13	30mm round test surface	--	JP-11-40	--	--	--

-- End of main test report --



IEC62368_1D - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
<p align="center"><b>ATTACHMENT TO TEST REPORT</b>  <b>IEC 62368-1</b>  <b>EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES</b>            (Audio/video, information and communication technology equipment - Part 1: Safety requirements)</p>			
Differences according to..... : EN 62368-1:2014+A11:2017			
Attachment Form No..... : EU_GD_IEC62368_1D_II			
Attachment Originator..... : Nemko AS			
Master Attachment..... : Date 2021-02-04			
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	<b>CENELEC COMMON MODIFICATIONS (EN)</b>					--																																				
	Clauses, subclauses, notes, tables, figures and annexes which are additional to those in IEC 62368-1:2014 are prefixed "Z".					P																																				
CONTENTS	<b>Add</b> the following annexes: Annex ZA (normative) Normative references to international publications with their corresponding European publications Annex ZB (normative) Special national conditions Annex ZC (informative) A-deviations Annex ZD (informative) IEC and CENELEC code designations for flexible cords					P																																				
	<b>Delete</b> all the "country" notes in the reference document (IEC 62368-1:2014) according to the following list: <table><tr><td>0.2.1</td><td>Note</td><td>1</td><td>Note 3</td><td>4.1.15</td><td>Note</td></tr><tr><td>4.7.3</td><td>Note 1 and 2</td><td>5.2.2.2</td><td>Note</td><td>5.4.2.3.2.2 Table 13</td><td>Note c</td></tr><tr><td>5.4.2.3.2.4</td><td>Note 1 and 3</td><td>5.4.2.5</td><td>Note 2</td><td>5.4.5.1</td><td>Note</td></tr><tr><td>5.5.2.1</td><td>Note</td><td>5.5.6</td><td>Note</td><td>5.6.4.2.1</td><td>Note 2 and 3</td></tr><tr><td>5.7.5</td><td>Note</td><td>5.7.6.1</td><td>Note 1 and 2</td><td>10.2.1 Table 39</td><td>Note 2, 3 and 4</td></tr><tr><td>10.5.3</td><td>Note 2</td><td>10.6.2.1</td><td>Note 3</td><td>F.3.3.6</td><td>Note 3</td></tr></table>					0.2.1	Note	1	Note 3	4.1.15	Note	4.7.3	Note 1 and 2	5.2.2.2	Note	5.4.2.3.2.2 Table 13	Note c	5.4.2.3.2.4	Note 1 and 3	5.4.2.5	Note 2	5.4.5.1	Note	5.5.2.1	Note	5.5.6	Note	5.6.4.2.1	Note 2 and 3	5.7.5	Note	5.7.6.1	Note 1 and 2	10.2.1 Table 39	Note 2, 3 and 4	10.5.3	Note 2	10.6.2.1	Note 3	F.3.3.6	Note 3	P
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	For special national conditions, see Annex ZB.					--																																				
1	<b>Add</b> the following note: NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2011/65/EU.					P																																				

IEC62368_1D - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
4.Z1	<p><b>Add</b> the following new subclause after 4.9:</p> <p>To protect against excessive current, short-circuits and earth faults in circuits connected to an a.c. <b>mains</b>, protective devices shall be included either as integral parts of the equipment or as parts of the building installation, subject to the following, a), b) and c):</p> <p>a) except as detailed in b) and c), protective devices necessary to comply with the requirements of B.3.1 and B.4 shall be included as parts of the equipment;</p> <p>b) for components in series with the mains input to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, short-circuit and earth fault protection may be provided by protective devices in the building installation;</p> <p>c) it is permitted for <b>pluggable equipment type B</b> or <b>permanently connected equipment</b>, to rely on dedicated overcurrent and short-circuit protection in the building installation, provided that the means of protection, e.g. fuses or circuit breakers, is fully specified in the installation instructions.</p> <p>If reliance is placed on protection in the building installation, the installation instructions shall so state, except that for <b>pluggable equipment type A</b> the building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet.</p>		P
5.4.2.3.2.4	<p><b>Add</b> the following to the end of this subclause:</p> <p>The requirement for interconnection with <b>external circuit</b> is in addition given in EN 50491-3:2009.</p>		N/A
10.2.1	<p>Add the following to <sup>c)</sup> and <sup>d)</sup> in table 39:</p> <p>For additional requirements, see 10.5.1.</p>		N/A

IEC62368_1D - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
10.5.1	<p><b>Add</b> the following after the first paragraph:  <i>For RS 1 compliance is checked by measurement under the following conditions:</i></p> <p><i>In addition to the normal operating conditions, all controls adjustable from the outside by hand, by any object such as a tool or a coin, and those internal adjustments or presets which are not locked in a reliable manner, are adjusted so as to give maximum radiation whilst maintaining an intelligible picture for 1 h, at the end of which the measurement is made.</i></p> <p>NOTE Z1 Soldered joints and paint lockings are examples of adequate locking.</p> <p><i>The dose-rate is determined by means of a radiation monitor with an effective area of 10 cm<sup>2</sup>, at any point 10 cm from the outer surface of the apparatus.</i></p> <p><i>Moreover, the measurement shall be made under fault conditions causing an increase of the high-voltage, provided an intelligible picture is maintained for 1 h, at the end of which the measurement is made.</i></p> <p><i>For RS1, the dose-rate shall not exceed 1 µSv/h taking account of the background level.</i></p> <p>NOTE Z2 These values appear in Directive 96/29/Euratom of 13 May 1996.</p>		N/A
10.6.1	<p><b>Add</b> the following paragraph to the end of the subclause:  EN 71-1:2011, 4.20 and the related tests methods and measurement distances apply.</p>		N/A
10.Z1	<p><b>Add</b> the following new subclause after 10.6.5.  <b>10.Z1 Non-ionizing radiation from radio frequencies in the range 0 to 300 GHz</b></p> <p>The amount of non-ionizing radiation is regulated by European Council Recommendation 1999/519/EC of 12 July 1999 on the limitation of exposure of the general public to electromagnetic fields (0 Hz to 300 GHz).</p> <p>For intentional radiators, ICNIRP guidelines should be taken into account for Limiting Exposure to Time-Varying Electric, Magnetic, and Electromagnetic Fields (up to 300 GHz). For hand-held and body-mounted devices, attention is drawn to EN 50360 and EN 50566</p>		N/A
G.7.1	<p><b>Add</b> the following note:  NOTE Z1 The harmonized code designations corresponding to the IEC cord types are given in Annex ZD.</p>		N/A

IEC62368_1D - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Bibliography	<p><b>Add</b> the following standards:</p> <p><b>Add</b> the following notes for the standards indicated:</p> <p>IEC 60130-9 NOTE Harmonized as EN 60130-9.</p> <p>IEC 60269-2 NOTE Harmonized as HD 60269-2.</p> <p>IEC 60309-1 NOTE Harmonized as EN 60309-1.</p> <p>IEC 60364 NOTE some parts harmonized in HD 384/HD 60364 series.</p> <p>IEC 60601-2-4 NOTE Harmonized as EN 60601-2-4.</p> <p>IEC 60664-5 NOTE Harmonized as EN 60664-5.</p> <p>IEC 61032:1997 NOTE Harmonized as EN 61032:1998 (not modified).</p> <p>IEC 61508-1 NOTE Harmonized as EN 61508-1.</p> <p>IEC 61558-2-1 NOTE Harmonized as EN 61558-2-1.</p> <p>IEC 61558-2-4 NOTE Harmonized as EN 61558-2-4.</p> <p>IEC 61558-2-6 NOTE Harmonized as EN 61558-2-6.</p> <p>IEC 61643-1 NOTE Harmonized as EN 61643-1.</p> <p>IEC 61643-21 NOTE Harmonized as EN 61643-21.</p> <p>IEC 61643-311 NOTE Harmonized as EN 61643-311.</p> <p>IEC 61643-321 NOTE Harmonized as EN 61643-321.</p> <p>IEC 61643-331 NOTE Harmonized as EN 61643-331.</p>		P
<b>ZB</b>	<b>ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)</b>		N/A
4.1.15	<p><b>Denmark, Finland, Norway and Sweden</b></p> <p>To the end of the subclause the following is added:</p> <p><b>Class I pluggable equipment type A</b> intended for connection to other equipment or a network shall, if safety relies on connection to reliable earthing or if surge suppressors are connected between the network terminals and <b>accessible</b> parts, have a marking stating that the equipment shall be connected to an earthed <b>mains</b> socket-outlet.</p> <p>The marking text in the applicable countries shall be as follows:</p> <p>In <b>Denmark</b>: "Apparatets stikprop skal tilsluttes en stikkontakt med jord som giver forbindelse til stikproppens jord."</p> <p>In <b>Finland</b>: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan"</p> <p>In <b>Norway</b>: "Apparatet må tilkoples jordet stikkontakt"</p> <p>In <b>Sweden</b>: "Apparaten skall anslutas till jordat uttag"</p>		N/A
4.7.3	<p><b>United Kingdom</b></p> <p>To the end of the subclause the following is added:</p> <p>The torque test is performed using a socket-outlet complying with BS 1363, and the plug part shall be assessed to the relevant clauses of BS 1363. Also see Annex G.4.2 of this annex</p>		N/A

IEC62368_1D - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.2.2.2	<b>Denmark</b> After the 2nd paragraph add the following: A warning (marking <b>safeguard</b> ) for high <b>touch current</b> is required if the <b>touch current</b> exceeds the limits of 3,5 mA a.c. or 10 mA d.c.		N/A
5.4.11.1 and Annex G	<b>Finland and Sweden</b> To the end of the subclause the following is added: For separation of the telecommunication network 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 <ul style="list-style-type: none"> <li>• two layers of thin sheet material, each of which shall pass the electric strength test below, or</li> <li>• one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below.</li> </ul> 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 <ul style="list-style-type: none"> <li>• passes the tests and inspection criteria of 5.4.8 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 5.4.9 shall be performed using 1,5 kV), and</li> <li>• is subject to routine testing for electric strength during manufacturing, using a test voltage of 1,5kV.</li> </ul> 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: <ul style="list-style-type: none"> <li>• the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 60384-14, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in 5.4.11;</li> <li>• the additional testing shall be performed on all the test specimens as described in EN 60384-14; the impulse test of 2,5 kV is to be performed before the endurance test in EN 60384-14, in the sequence of tests as described in EN 60384-14.</li> </ul>		N/A
5.5.2.1	<b>Norway</b> After the 3rd paragraph the following is added: Due to the IT power system used, capacitors are required to be rated for the applicable line-to-line voltage (230 V).		N/A

IEC62368_1D - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.5.6	<b>Finland, Norway and Sweden</b> To the end of the subclause the following is added: Resistors used as <b>basic safeguard</b> or bridging <b>basic insulation</b> in <b>class I pluggable equipment type A</b> shall comply with G.10.1 and the test of G.10.2.		N/A
5.6.1	<b>Denmark</b> <b>Add</b> to the end of the subclause Due to many existing installations where the socket-outlets can be protected with fuses with higher rating than the rating of the socket-outlets the protection for pluggable equipment type A shall be an integral part of the equipment. <i>Justification:</i> In Denmark an existing 13 A socket outlet can be protected by a 20 A fuse.		N/A
5.6.4.2.1	<b>Ireland and United Kingdom</b> After the indent for <b>pluggable equipment type A</b> , the following is added: – the <b>protective current rating</b> is taken to be 13 A, this being the largest rating of fuse used in the <b>mains</b> plug.		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 <sup>2</sup> to 1,5 mm <sup>2</sup> in cross-sectional area.		N/A
5.7.5	<b>Denmark</b> To the end of the subclause the following is added: The installation instruction shall be affixed to the equipment if the <b>protective conductor current</b> exceeds the limits of 3,5 mA a.c. or 10 mA d.c.		N/A

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

IEC62368_1D - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.7.6.2	<b>Denmark</b> To the end of the subclause the following is added: The warning (marking safeguard) for high touch current is required if the touch current or the protective current exceed the limits of 3,5 mA .		N/A
B.3.1 and B.4	<b>Ireland and United Kingdom</b> The following is applicable: To protect against excessive currents and short-circuits in the primary circuit of <b>direct plug-in equipment</b> , tests according to Annexes B.3.1 and B.4 shall be conducted using an external miniature circuit breaker complying with EN 60898-1, Type B, rated 32A. If the equipment does not pass these tests, suitable protective devices shall be included as an integral part of the <b>direct plug-in equipment</b> , until the requirements of Annexes B.3.1 and B.4 are met		N/A
G.4.2	<b>Denmark</b> To the end of the subclause the following is added: Supply cords of single phase appliances having a rated current not exceeding 13 A shall be provided with a plug according to DS 60884-2-D1:2011. CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a. If a single-phase equipment having a RATED CURRENT exceeding 13 A or if a poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with the standard sheets DK 6-1a in DS 60884-2-D1 or EN 60309-2. Mains socket outlets intended for providing power to Class II apparatus with a rated current of 2,5 A shall be in accordance DS 60884-2-D1:2011 standard sheet DKA 1-4a. Other current rating socket outlets shall be in compliance with Standard Sheet DKA 1-3a or DKA 1-1c. Mains socket-outlets with earth shall be in compliance with DS 60884-2-D1:2011 Standard Sheet DK 1-3a, DK 1-1c, DK1-1d, DK 1-5a or DK 1-7a <i>Justification:</i> Heavy Current Regulations, Section 6c		N/A



IEC62368_1D - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
G.4.2	<b>United Kingdom</b> To the end of the subclause the following is added: The plug part of direct plug-in equipment shall be assessed to BS 1363: Part 1, 12.1, 12.2, 12.3, 12.9, 12.11, 12.12, 12.13, 12.16, and 12.17, except that the test of 12.17 is performed at not less than 125 °C. Where the metal earth pin is replaced by an Insulated Shutter Opening Device (ISOD), the requirements of clauses 22.2 and 23 also apply.		N/A
G.7.1	<b>United Kingdom</b> To the first paragraph the following is added: Equipment which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to BS 1363 by means of that flexible cable or cord shall be fitted with a 'standard plug' in accordance with the Plugs and Sockets etc (Safety) Regulations 1994, Statutory Instrument 1994 No. 1768, unless exempted by those regulations. NOTE "Standard plug" is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.		N/A
G.7.1	<b>Ireland</b> To the first paragraph the following is added: Apparatus which is fitted with a flexible cable or cord shall be provided with a plug in accordance with Statutory Instrument 525: 1997, "13 A Plugs and Conversion Adapters for Domestic Use Regulations: 1997. S.I. 525 provides for the recognition of a standard of another Member State which is equivalent to the relevant Irish Standard		N/A
G.7.2	<b>Ireland and United Kingdom</b> To the first paragraph the following is added: A power supply cord with a conductor of 1,25 mm <sup>2</sup> is allowed for equipment which is rated over 10 A and up to and including 13 A.		N/A

IEC62368_1D - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
<b>ZC</b>	<b>ANNEX ZC, NATIONAL DEVIATIONS (EN)</b>		N/A
10.5.2	<p><b>Germany</b></p> <p>The following requirement applies:</p> <p>For the operation of any cathode ray tube intended for the display of visual images operating at an acceleration voltage exceeding 40 kV, authorization is required, or application of type approval (Bauartzulassung) and marking.</p> <p><i>Justification:</i></p> <p>German ministerial decree against ionizing radiation (Röntgenverordnung), in force since 2002-07-01, implementing the European Directive 96/29/EURATOM.</p> <p><b>NOTE</b> Contact address:</p> <p>Physikalisch-Technische Bundesanstalt,  Bundesallee 100,  D-38116 Braunschweig,  Tel.: Int +49-531-592-6320,  Internet: <a href="http://www.ptb.de">http://www.ptb.de</a></p>		N/A

IEC62368_1D - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
<p align="center"><b>ATTACHMENT TO TEST REPORT IEC 62368-1</b>  <b>DENMARK NATIONAL DIFFERENCES</b>  Audio/video, information and communication technology equipment –  Part 1: Safety requirements</p>			
<b>Differences according to</b> ..... : DS/EN 62368-1:2014			
<b>Attachment Form No.</b> .... : DK_ND_IEC62368_1D			
<b>Attachment Originator</b> ..... : UL (Demko)			
<b>Master Attachment</b> ..... : 2021-02-04			
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	National Differences		
4.1.15	<p>To the end of the subclause the following is added:</p> <p>Class I pluggable equipment type A intended for connection to other equipment or a network shall, if safety relies on connection to reliable earthing or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment shall be connected to an earthed mains socket-outlet.</p> <p>The marking text in the applicable countries shall be as follows:  “Apparatets stikprop skal tilsluttes en stikkontakt med jord som giver forbindelse til stikproppens jord.”</p>		N/A
5.2.2.2	<p>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.</p>		N/A
5.6.1	<p>Add to the end of the subclause:</p> <p>Due to many existing installations where the socket-outlets can be protected with fuses with higher rating than the rating of the socket-outlets the protection for pluggable equipment type A shall be an integral part of the equipment.</p> <p>Justification:  In Denmark an existing 13 A socket outlet can be protected by a 20 A fuse.</p>		N/A
5.7.5	<p>To the end of the subclause the following is added:</p> <p>The installation instruction shall be affixed to the equipment if the protective conductor current exceeds the limits of 3,5 mA a.c. or 10 mA d.c.</p>		N/A

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

IEC62368_1D - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
<p align="center"><b>ATTACHMENT TO TEST REPORT</b>  <b>IEC 62368-1</b>  <b>ITALY NATIONAL DIFFERENCES</b>  (Audio/video, information and communication technology equipment – Part 1: Safety requirements)</p>			
<b>Differences according to.....</b> : CEI EN 62368-1:2016			
<b>Attachment Form No.</b> ..... : IT_ND_IEC62368_1D			
<b>Attachment Originator</b> ..... : IMQ S.p.A.			
<b>Master Attachment</b> ..... : Date 2021-02-04			
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	National Differences	
F.1	<p><b>Italy</b></p> <p>The following requirements shall be fulfilled:</p> <ul style="list-style-type: none"> <li>• The power consumption in Watts (W) shall be indicated on TV receivers and in their instruction for use (Measurement according to EN 60555-2).</li> </ul> <p><i>Note: EN 60555-2 has since been replaced by IEC 60107-1:1997.</i></p> <ul style="list-style-type: none"> <li>• TV receivers shall be provided with an instruction for use, schematic diagrams and adjustments procedure in Italian language.</li> <li>• Marking for controls and terminals shall be in Italian language. Abbreviation and international symbols are allowed provided that they are explained in the instruction for use.</li> <li>• The ECC manufacturers are bound to issue a conformity declaration according to the above requirements in the instruction manual. The correct statement for conformity to be written in the instruction manual, shall be:</li> </ul> <p><i>Questo apparecchio è fabbricato nella CEE nel rispetto delle disposizioni del D.M. marzo 1992 ed è in particolare conforme alle prescrizioni dell'art. 1 dello stesso D.M.</i></p> <ul style="list-style-type: none"> <li>• The first importers of TV receivers manufactured outside EEC are bound to submit the TV receivers for previous conformity certification to the Italian Post Ministry (PP.TT). The TV receivers shall have on the backcover the certification number in the following form:</li> </ul> <p>D.M. 26/03/1992 xxxxx/xxxxx/S or T or pT  S for stereo  T for Teletext  pT for retrofitable teletext</p> <p><i>Justification:</i>  Ministerial Decree of 26 March 1992 : National rules for television receivers trade.</p> <p><i>NOTE/: Ministerial decree above contains additional, but not safety relevant requirements</i></p>	N/A

IEC62368_1D - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
<b>ATTACHMENT TO TEST REPORT</b> <b>IEC 62368-1</b> <b>U.S.A. AND CANADA NATIONAL DIFFERENCES</b> (Audio/video, information and communication technology equipment – Part 1: Safety requirements)			
<b>Differences according to</b> ..... : CSA/UL 62368-1:2014			
<b>TRF template used</b> ..... : IECEE OD-2020-F3, Ed. 1.1			
<b>Attachment Form No</b> ..... : US_CA_ND_IEC62368_1D			
<b>Attachment Originator</b> ..... : UL(US)			
<b>Master Attachment</b> ..... : Dated 2021-02-04			
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<b>IEC 62368-1 - US and Canada National Differences</b> <b>Special National Conditions based on Regulations and Other National Differences</b>			
1.1	All equipment is to be designed to allow installation according to the National Electrical Code (NEC), ANSI/NFPA 70, the Canadian Electrical Code (CEC), Part I, CAN/CSA C22.1, and when applicable, the National Electrical Safety Code, IEEE C2. Also, for such equipment marked or otherwise identified, installation is allowed per the Standard for the Protection of Information Technology Equipment, ANSI/NFPA 75.		P
1.4	Additional requirements apply to some forms of power distribution equipment, including sub-assemblies.		N/A
4.1.17	For lengths exceeding 3.05 m, external interconnecting flexible cord and cable assemblies are required to be a suitable cable type (e.g., DP, CL2) specified in the NEC.		N/A
	For lengths 3.05 m or less, external interconnecting flexible cord and cable assemblies that are not types specified in the NEC generally are required to have special construction features and identification markings.		N/A
4.8	Lithium coin / button cell batteries have modified special construction and performance requirements.		N/A
5.6.3	Protective earthing conductors comply with the minimum conductor sizes in Table G.5, except as required by Table G.7ADV.1 for cord connected equipment, or Annex DVH for permanently connected equipment		N/A
5.7.7	Equipment intended to receive telecommunication ringing signals complies with a special touch current measurement tests.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
6.5.1	PS3 wiring outside a fire enclosure complies with single fault testing in B.4, or be current limited per one of the permitted methods.		N/A
Annex F (F.3.3.8)	Output terminals provided for supply of other equipment, except mains, supply are marked with a maximum rating or references to which equipment it is permitted to be connected.		N/A
Annex G (G.7.1)	Permanent connection of equipment to the mains supply by a power supply cord is not permitted, except for certain equipment, such as ATMs.		N/A
Annex G (G.7.3)	Power supply cords are required to have attachment plugs rated not less than 125 percent of the rated current of the equipment.		N/A
	Flexible power supply cords are required to be compatible with Article 400 of the NEC, and Tables 11 and 12 of the CEC.		N/A
Annex G (G.7.5)	Minimum cord length is required to be 1.5 m, with certain constructions such as external power supplies allowed to consider both input and output cord lengths into the requirement. Power supply cords are required to be no longer than 4.5 m in length if used in ITE Rooms.		N/A
Annex H.2	Continuous ringing signals under normal operating conditions up to 16 mA only are permitted if the equipment is subjected to special installation and performance restrictions.		N/A
Annex H.4	For circuits with other than ringing signals and with voltages exceeding 42.4 V <sub>peak</sub> or 60 V d.c., the maximum acceptable current through a 2000 ohm resistor (or greater) connected across the voltage source with other loads disconnected is 7.1 mA peak or 30 mA d.c. under normal operating conditions.		N/A
Annex M	Battery packs for stationary applications comply with special component requirements.		N/A
Annex DVA (1)	Equipment intended for use in spaces used for environmental air are subjected to special flammability requirements for heat and visible smoke release.		N/A
	For ITE room applications, automated information storage systems with combustible media greater than 0.76 m <sup>3</sup> (27 cu ft) have a provision for connection of either automatic sprinklers or a gaseous agent extinguishing system with an extended discharge.		N/A
	Consumer products designed or intended primarily for children 12 years of age or younger are subject to additional requirements in accordance with U.S. & Canadian Regulations.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Baby monitors additionally comply with ASTM F2951, Consumer Safety Specification for Baby Monitors.		N/A
Annex DVA (5.6.3)	For Pluggable Equipment Type A, the protection in the installation is assumed to be 20A.		N/A
Annex DVA (6.3)	The maximum quantity of flammable liquid stored in equipment complies with NFPA 30.		N/A
Annex DVA (6.4.8)	For ITE room applications, enclosures with combustible material measuring greater than 0.9 m <sup>2</sup> (10 sq ft) or a single dimension greater than 1.8 m (6 ft) have a flame spread rating of 50 or less. For equipment with the same dimensions for other applications, an external surface that is not a fire enclosure requires a min. flammability classification of V-1.		N/A
Annex DVA (10.3.1)	Equipment with lasers meets the U.S. Code of Federal Regulations 21 CFR 1040 (and the Canadian Radiation Emitting Devices Act, REDR C1370).		N/A
Annex DVA (10.5.1)	Equipment that produces ionizing radiation complies with the U.S. Code of Federal Regulations, 21 CFR 1020 (and the Canadian Radiation Emitting Devices Act, REDR C1370).		N/A
Annex DVA (F.3.3.3)	Equipment for use on a.c. mains supply systems with a neutral and more than one phase conductor (e.g. 120/240 V, 3-wire) require a special marking format for electrical ratings. Additional considerations apply for voltage ratings that exceed the attachment cap rating or are lower than the "Normal Operating Condition" in Table 2 of CAN/CSA C22.2 No. 235."		N/A
Annex DVA (F.3.3.5)	Equipment identified for ITE (computer) room installation is marked with the rated current		N/A
Annex DVA (G.1)	Vertically-mounted disconnect switches and circuit breakers have the "on" position indicated by the handle in the up position		N/A
Annex DVA (G.3.4)	Suitable NEC/CEC branch circuit protection rated at the maximum circuit rating is required for all standard supply outlets and receptacles (such as supplied in power distribution units) if the supply branch circuit protection is not suitable.		N/A
Annex DVA (G.4.2)	Equipment with isolated ground (earthing) receptacles complies with NEC 250.146(D) and CEC 10-112 and 10-906(8).		N/A
Annex DVA (G.4.3)	Where a fuse is used to provide Class 2 or Class 3 current limiting, it is not operator-accessible unless it is non- interchangeable.		N/A
Annex DVA (G.5.3)	Power distribution transformers distributing power at 100 volts or more, and rated 10 kVA or more, require special transformer overcurrent protection.		N/A



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Clause	Requirement + Test	Result - Remark	Verdict
Annex DVA (G.5.4)	Motor control devices are required for cord-connected equipment with a mains-connected motor if the equipment is rated more than 12 A, or if the equipment has a nominal voltage rating greater than 120 V, or if the motor is rated more than 1/3 hp (locked rotor current over 43 A).		N/A
Annex DVA (Annex M)	For ITE room applications, equipment with battery systems capable of supplying 750 VA for five minutes have a battery disconnect means that may be connected to the ITE room remote power-off circuit.		N/A
Annex DVA (Q)	Wiring terminals intended to supply Class 2 outputs according to the NEC or CEC Part 1 are marked with the voltage rating and "Class 2" or equivalent; marking is located adjacent to the terminals and visible during wiring.		N/A
Annex DVB (1)	Additional requirements apply for equipment used for entertainment purposes intended for installation in general patient care areas of health care facilities.		N/A
Annex DVC (1)	Additional requirements apply for equipment intended for mounting under kitchen cabinets.		N/A
Annex DVE (4.1.1)	Some equipment, components, sub-assemblies and materials associated with the risk of fire, electric shock, or personal injury have component or material ratings in accordance with the applicable national (U.S. and Canadian) component or material requirements. Components required to comply include: appliance couplers, attachment plugs, battery back-up systems, battery packs, circuit breakers, communication circuit accessories, connectors (used for current interruption of non-LPS circuits), power supply cords, direct plug-in equipment, electrochemical capacitor modules (energy storage modules with ultra-capacitors), enclosures (outdoor), flexible cords and cables, fuses (branch circuit), ground-fault current interrupters, interconnecting cables, data storage equipment, printed wiring, protectors for communications circuits, receptacles, surge protective devices, vehicle battery adapters, wire connectors, and wire and cables.		P
Annex DVH	Equipment for permanent connection to the mains supply is subjected to additional requirements.		N/A
Annex DVH (DVH.1)	Wiring methods (terminals, leads, etc.) used for the connection of the equipment to the mains are in accordance with the NEC/CEC.		N/A
Annex DVH (DVH.3.2)	Terminals for permanent wiring, including protective earthing terminals, are suitable for U.S./Canadian wire gauge sizes, rated 125 percent of the equipment rating, and are specially marked when specified.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
Annex DVH (DVH.3.2)	Wire binding screws are not permitted to attach conductors larger than 10 AWG (5.3 mm <sup>2</sup> ).		N/A
Annex DVH (DVH.4)	Permanently connected equipment is required to have a suitable wiring compartment and wire bending space.		N/A
Annex DVH (DVH 5.5)	Equipment connected to a centralized d.c. power system, and having one pole of the DC mains input terminal connected to the main protective earthing terminal in the equipment, complies with special earthing, wiring, marking and installation instruction requirements.		N/A
Annex DVI (6.7 )	Equipment intended for connection to telecommunication network outside plant cable is required to be protected against overvoltage from power line crosses.		N/A
Annex DVJ (10.6.1 )	Equipment connected to a telecommunication and cable distribution networks and supplied with an earphone intended to be held against, or in the ear is required to comply with special acoustic pressure requirements.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

<p align="center"><b>ATTACHMENT TO TEST REPORT</b>  <b>IEC 62368-1</b>  <b>(JAPAN) NATIONAL DIFFERENCES</b>  (Audio/video, information and communication technology equipment – Part 1: Safety requirements)</p>			
<b>Differences according to</b> ..... : J62368-1 (2020)			
<b>TRF template used</b> ..... : IEC EE OD-2020-F3, Ed. 1.1			
<b>Attachment Form No.</b> .... : JP_ND_IEC62368_1D			
<b>Attachment Originator</b> ..... : UL (JP)			
<b>Master Attachment</b> ..... : Date 2021-02-04			
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	National Differences		—
4.1.2	Where the component, or a characteristic of a component, is a safeguard or a part of a safeguard, components shall comply with the requirements of this standard or, where specified in a requirements clause, with the safety aspects of the relevant JIS component standards or IEC component standards, or components shall have properties equivalent to or better than these.		P
5.6.1	Mains socket-outlet and appliance outlet shall comply with Clause G.4.2A if they are incorporated as part of the equipment.		N/A
5.6.2.1	Mains connection of class 0I equipment: Instructional safeguard in accordance with Clause F.3.6.1A; Mains plug having a lead wire for protective earthing connection of class 0I equipment; Independent main protective earthing terminal installed by ordinary person.		N/A
5.6.2.2	This requirement does not apply to internal conductor of the cord set that is covered by the sheath of mains cord and is formed together with mains plug and appliance connector.		N/A
5.6.3	In case of class 0I equipment using power supply cord having two conductors (no earthing conductor), the conductor of protective earthing lead wire shall comply with either of the following: – use of annealed copper wire with 1.6 mm diameter or corrosion-inhibiting metal wire having size and strength that are equivalent to or more than the above copper wire – single core cord or single core cable with 1.25 mm <sup>2</sup> or more cross-sectional area		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.7.3	For class 0I equipment that is provided with mains socket-outlet in the configuration as specified in JIS C 8282 series or JIS C 8303, or otherwise being considered to comply with relevant regulations, or that is provided with mains appliance outlet as specified in JIS C 8283-2-2 for the purpose of interconnection, the measurement is conducted on the system of the interconnected equipment having a single connection to the mains.		N/A
5.7.4	In case of class 0I equipment, touch current shall not exceed 1.41 mA peak or for sinusoidal wave, 1.0 mA r.m.s. when measured using the network specified in Figure 4 of IEC 60990.		N/A
6.4.3.3	A fuse complying with JIS C 6575 series or a fuse having equivalent characteristics shall open within 1 s. For Class A fuse of JIS C 6575, replace “2.1 times” by “1.35 times” and in case of Class B fuse of JIS C 6575, replace “2.1 times” by “1.6 times”. A fuse not complying with JIS C 6575 series shall be tested with the breaking capacity taken into account.		N/A
8.5.4.2.1	Only three-phase stationary equipment rated more than 200 V ac can be considered as being for use in locations where children are not likely to be present, when complying with Clause F.4.		N/A
8.5.4.2.2	For equipment installed where children may be present, an instructional safeguard shall be provided by easily understandable wording in accordance with Clause F.5, except that element 3 is optional.		N/A
8.5.4.2.4	The media destruction device is tested according to Clause V.1.2 with applicable jointed test probes to the opening. And then the wedge probe per Figure V.4 shall not contact any moving part.		N/A
8.5.4.2.5	The wedge probe of Figure V.4 and applicable jointed test probes specified in Clause V.1.2 shall not contact any moving part. Instructional safeguard shall not be used instead of equipment safeguard for preventing access to hazardous moving parts.		N/A
9.2.6, Table 38	Handles, Knobs, grips, etc. and external surfaces either held, touched or worn against the body in normal use (> 1 min) <sup>b,c</sup>		N/A
F.3.5.1	Instructional safeguard of class 0I equipment in accordance with Clause F.5 when a mains socket-outlet as specified in JIS C 8282 series, JIS C 8303 or relevant regulation to which class I equipment can be connected is provided in accordance with Clause G.4.2A except for the cases where the socket-outlet is accessible only to skilled persons.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
F.3.5.3	If the fuse is necessary for the safeguard function, the symbols indicating pre-arcing time-current characteristic.		N/A
F.3.6.1A	Marking for class 0I equipment The requirements of Clauses F.3.6.1.1 and F.3.6.1.3 shall be applied to class 0I equipment. For class 0I equipment, a marking of instructions and instructional safeguard shall be provided regarding the earthing connection.		N/A
F.3.6.2.1	Symbols, IEC 60417-5172 (2003-02) or IEC 60417-6092 (2011-10), shall not be used for class I equipment or class 0I equipment.		N/A
F.4	Instruction for audio equipment with terminals classified as ES3 in accordance with Table E.1, and for other equipment with terminals marked in accordance with F.3.6.1 and F.3.6.1A. Installation instruction for the protective earthing connection for class 0I equipment provided with independent main protective earthing terminal, where the cord for the protective earthing connection is not provided within the package for the equipment.		N/A
G.3.2.1	The thermal link when tested as a separate component, shall comply with the requirements of JIS C 6691 or have properties equivalent to or better than that.		N/A
G.3.4	Except for devices covered by Clause G.3.5, overcurrent protective devices used as a safeguard shall comply with the relevant part of JIS C 6575 (corresponding to IEC60127) or shall have equivalent characteristics. If there are no applicable IEC standards, overcurrent protective devices used as a safeguard shall comply with their applicable IEC standards.		N/A
G.4.1	This requirement is not applicable to Clauses G.4.2 and G.4.2A.		N/A
G.4.2	Mains connector shall comply with JIS C 8282 series, JIS C 8283 series, JIS C 8285, JIS C 8303 or IEC 60309 series. Mains plugs and socket-outlets shall comply with JIS C 8282 series, JIS C 8303, IEC 60309 series, or have equivalent or better performance. A power supply cord set provided with appliance connector that can fit appliance inlet complying with JIS C 8283-1 shall comply with JIS C 8286. Construction preventing mechanical stress not to transmit to the soldering part of inlet terminal. Consideration for an equipment rated not more than 125 V provided with Type C14 and C18 appliance coupler complying with JIS C 8283 series.		N/A

IEC62368_1D ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
G.4.2A	Mains socket-outlet and interconnection coupler provided with the class II, class I and class 0I equipment respectively.		N/A
G.7.1	A mains supply cord need not include the protective earthing conductor for class 0I equipment provided with independent protective earthing conductor.		N/A
G.8.3.3	Withstand $1,71 \times 1,1 \times U_0$ for 5 s.		N/A

IEC62368_1D - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

<b>ATTACHMENT TO TEST REPORT</b> IEC 62368-1 (AUSTRALIA / NEW ZEALAND) NATIONAL DIFFERENCES (Audio/video, information and communication technology equipment)			
<b>Differences according to</b> .....: AS/NZS 62368.1:2018			
<b>TRF template used:</b> .....: IECEE OD-2020-F3:2022, Ed. 1.2			
<b>Attachment Form No.</b> .....: AU_NZ_ND_IEC62368_1D			
<b>Attachment Originator</b> .....: JAS-ANZ			
<b>Master Attachment</b> .....: 2023-11-14			
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	<b>National Differences</b>		P
<b>Appendix ZZ</b>	Variations to IEC 62368-1:2014 (ED. 2.0) for Australia and New Zealand		P
<b>ZZ1 Scope</b>	This Appendix lists the normative variations to IEC 62368-1:2014 (ED. 2.0)		P
<b>ZZ2 Variations</b>	The following modifications are required for Australian/New Zealand conditions:		P
<b>2</b>	Add the following to the list of normative references: The following normative documents are referenced in Appendix ZZ: -AS/NZS 3112, <i>Approval and test specification—Plugs and socket-outlets</i> -AS/NZS 3123, <i>Approval and test specification—Plugs, socket-outlets and couplers for general industrial application</i> -AS/NZS 3191, <i>Electric flexible cords</i> -AS/NZS 60065, <i>Audio, video and similar electronic apparatus—Safety requirements (IEC 60065:2015 (ED.8.0) MOD)</i> -AS/NZS 60320.1, <i>Appliance couplers for household and similar general purposes, Part 1: General requirements (IEC 60320-1, Ed.2.1 (2007) MOD)</i> -AS/NZS 60320.2.2, <i>Appliance couplers for household and similar general purposes Part 2.2: Interconnection couplers for household and similar equipment (IEC 60320-2-2, Ed.2.0 (1998) MOD)</i> -AS/NZS 60695.2.11, <i>Fire hazard testing, Part 2.11: Glowing/hot wire based test methods—Glow-wire flammability test method for end-products</i> -AS/NZS 60695.11.5, <i>Fire hazard testing, Part 11.5: Test flames—Needle-flame test method—Apparatus, confirmatory test arrangement and guidance</i> -AS/NZS 60695.11.10, <i>Fire hazard testing, Part 11.10: Test flames—50 W horizontal and vertical flame test methods</i> -AS/NZS 60884.1, <i>Plugs and socket-outlets for</i>		P

IEC62368_1D - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<p><i>household and similar purposes,</i>  <i>Part 1: General requirements</i>            -AS/NZS 60950.1:2015, <i>Information technology equipment—Safety, Part 1: General requirements (IEC 60950-1, Ed.2.2 (2013), MOD)</i>            IEC 61032:1997, <i>Protection of persons and equipment by enclosures—Probes for verification</i>            -AS/NZS 61558.1:2008 (including Amendment 2:2015), <i>Safety of Power Transformers, Power Supplies, Reactors and Similar Products, Part 1: General requirements and tests (IEC 61558-1 Ed 2.1, MOD)</i>            -AS/NZS 61558.2.16, <i>Safety of transformers, reactors, power supply units and similar products for voltages up to 1 100 V, Part 2.16: Particular requirements and tests for switch mode power supply units and transformers for switch mode power supply units.</i></p>		
4.1.1	<p><b>Application of requirements and acceptance of materials, components and subassemblies</b>            1 <i>Replace the text 'IEC 60950-1' with 'AS/NZS 60950.1:2015'.</i>            2 <i>Replace the text 'IEC 60065' with 'AS/NZS 60065'.</i></p>		P
4.7	<b>Equipment for direct insertion into mains socket-outlets</b>		N/A
4.7.2	<p><b>Requirements</b>  <i>Delete the text of the second paragraph and replace with the following:</i>            Equipment with a plug portion, suitable for insertion into a 10 A 3-pin flat-pin socket-outlet complying with AS/NZS 3112 shall comply with the requirements in AS/NZS 3112 for equipment with integral pins for insertion into socket-outlets.</p>		N/A
4.7.3	<p><b>Compliance Criteria</b>  <i>Delete the first paragraph and Note 1 and Note 2 and replace with the following:</i>  <i>Compliance is checked by inspection and, if necessary, by the tests in AS/NZS 3112.</i></p>		N/A
4.8	<p><i>Delete existing clause title and replace with the following:</i>  <b>4.8 Products containing coin/button cell batteries</b></p>		N/A
4.8.1	<p><b>General</b>            1 Second dashed point, <i>delete the text and replace with the following:</i>            – include coin/button cell batteries with a diameter of 32 mm or less.            2 After the second dashed point, <i>insert the following Note:</i>            NOTE 1: Batteries are specified in IEC 60086-2.            3 After the third dashed point, <i>renumber the existing Note as 'NOTE 2'.</i>            4 Fifth dashed point, <i>delete the word 'lithium'.</i></p>		N/A
4.8.2	<p><b>Instructional Safeguard</b>            First line, <i>delete the word 'lithium'.</i></p>		N/A



IEC62368_1D - ATTACHMENT					
Clause	Requirement + Test		Result - Remark	Verdict	
4.8.3	<b>Construction</b> First line, after the word 'Equipment' <i>insert</i> the words 'containing one or more coin/button batteries and'			N/A	
4.8.5	<b>Compliance criteria</b> <i>Delete</i> the first paragraph and <i>replace</i> with the following: <i>Compliance is checked by applying a force of 30 N +/- 1 N for 10 s to the battery compartment door/cover by a rigid test finger according to test probe 11 of IEC 61032:1997 at the most unfavourable place and in the most unfavourable direction. The force shall be applied in one direction at a time.</i>			N/A	
5.4.10.2	<b>Test methods</b>			N/A	
5.4.10.2.1	<b>General</b> <i>Delete</i> the first paragraph and <i>replace</i> with the following: In Australia only, the separation is checked by the test of both Clause 5.4.10.2.2 and Clause 5.4.10.2.3. In New Zealand, the separation is checked by the test of either Clause 5.4.10.2.2 or Clause 5.4.10.2.3.			N/A	
Table 29	<i>Replace</i> the table with the following:			N/A	
Parts		Impulse test		Steady state test	
		New Zealand                      Australia		New Zealand	Australia
Parts indicated in Clause 5.4.10.1 a) <sup>a</sup>		2.5 kV 10/700 µs	7.0 kV for hand-held telephones and headsets, 2.5 kV for other equipment. 10/700 µs	1.5 kV	3 kV
Parts indicated in Clause 5.4.10.1 b) and c) <sup>b</sup>		1.5 kV 10/700 µs <sup>c</sup>		1.0 kV	1.5 kV
<sup>a</sup> Surge suppressors shall not be removed. <sup>b</sup> Surge suppressors may be removed, provided that such devices pass the impulse test of Clause 5.4.10.2.2 when tested as components outside the equipment. <sup>c</sup> During this test, it is allowed for a surge suppressor to operate and for a sparkover to occur in a GDT.					
5.4.10.2.2	After the first paragraph, <i>insert</i> new Notes 201 and 202 as follows: NOTE 201 For Australia, the 7 kV impulse simulates lightning surges on typical rural and semi-rural network lines. NOTE 202 For Australia, the value of 2.5 kV for Clause 5.4.10.1 a) was chosen to ensure the adequacy of the insulation concerned and does not necessarily simulate likely overvoltages.				N/A
5.4.10.2.3	After the first paragraph, <i>insert</i> new Notes 201 and 202 as follows: NOTE 201 For Australia, where there are capacitors across the insulation under test, it is recommended that d.c. test voltages are used. NOTE 202 The 3 kV and 1.5 kV values for Australia have been determined considering the low frequency induced voltages from the power supply distribution system.				N/A

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Clause	Requirement + Test	Result - Remark	Verdict
<b>6</b>	<b>Electrically-caused fire</b>		N/A
<b>6.1</b>	<b>General</b> After the first paragraph, <i>insert</i> the following new paragraph: Alternatively, the requirements of Clauses 6.2 to 6.5.2 are considered to be fulfilled if the equipment complies with the requirements of Clause 6.202		N/A
<b>6.6</b>	After Clause 6.6, <i>add</i> the new Clauses 6.201 and 6.202 as follows: <b>6.201 External power supplies, docking stations and other similar devices</b> and <b>6.202 Resistance to fire—Alternative tests</b> (see special national conditions)		N/A
<b>8.5.4</b>	<b>Special categories of equipment comprising moving parts</b>		N/A
<b>8.5.4.1</b>	<b>Large data storage equipment</b> In the first dashed row and the second dashed rows <i>replace</i> 'IEC 60950-1:2005' with 'AS/NZS 60950.1:2015'.		N/A
<b>8.6</b>	<b>Stability of equipment</b>		N/A
<b>8.6.1 and Table 36</b>	<b>Requirements</b> 1. Table 36, <i>insert</i> Footnote c at the end of the 'Glass slide' heading, and <i>add</i> a new Footnote c after the text of Footnote b in the last row of Table 36 as follows: ° The glass slide test is not applicable to floor standing equipment, even though the equipment may have controls or a display. 2. Table 36, fifth row, <i>insert</i> <sup>201</sup> at the end of 'No stability requirements' 3. Table 36, ninth row, <i>insert</i> <sup>201</sup> at the end of 'No stability requirements' 4. Table 36, <i>add</i> the following new footnote: 201 MS2 and MS3 television sets and display devices, designed only for fixing to a wall, ceiling or equipment rack, are not subjected to stability requirements only if the instructional safeguard of Clause 8.6.1.201 is provided. Otherwise, the glass slide requirements of Clause 8.6.4 and horizontal force requirements of Clause 8.6.5 apply. 5. Second paragraph beneath Table 36, <i>delete</i> the words 'MS2 and MS3 television sets' and <i>replace</i> with 'MS2 and MS3 television sets and display devices'		N/A
<b>8.6.1</b>	After Clause 8.6.1 <i>add</i> the following new clauses: <b>8.6.1.201 Instructional safeguard for fixed-mount television sets</b> (see special national conditions)		N/A
<b>Annex F Paragraph F.3.5.1</b>	<b>Mains appliance outlet and socket-outlet markings</b> <i>Replace</i> 'IEC 60320-2-2' with 'AS/NZS 60320.2.2'.		N/A

IEC62368_1D - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
<b>Annex G</b> <b>Paragraph G.4.2</b>	<b>Mains connectors</b> 1 In the second line <i>insert</i> 'or AS/NZS 3123' after 'IEC 60906-1'. 2 In the second line <i>insert</i> 'or AS/NZS 60320 series' after 'IEC 60320 series' 3 <i>Add</i> the following new paragraph: 10 A or 15 A 250 V flat pin plugs for the connection of equipment to mains-powered socket-outlets for household or similar general use shall comply with AS/NZS 3112 or AS/NZS 60884.1.	Certified	P
<b>Paragraph G.5.3.1</b>	<b>Transformers, General</b> 1 In the third dashed point <i>replace</i> 'IEC 61558-1 and the relevant parts of IEC 61558-2' with 'AS/NZS 61558-1 and the relevant parts of AS/NZS 61558.2' 2 In the fourth dashed point <i>replace</i> 'IEC 61558-2-16' with 'AS/NZS 61558.2.16'.		N/A
<b>Paragraph G.7.1</b>	<b>Mains supply cords, General</b> In the fourth dashed paragraph, <i>replace</i> 'IEC 60320-1' with 'AS/NZS 60320.1'		N/A
<b>Table G.5</b>	<b>Sizes of conductors</b> 1 In the second row, first column, <i>delete</i> '6' and <i>replace</i> with '7.5' 2 In the second row, second column, <i>delete</i> '0,75' and <i>replace</i> with '0.75 <sup>b</sup> ' 3 <i>Delete</i> Note 1. 4 <i>Replace</i> 'NOTE 2' with 'NOTE:'. 5 <i>Delete</i> the text of 'Footnote b' and <i>replace</i> with the following: <sup>b</sup> This nominal cross-sectional area is only allowed for Class II appliances if the length of the power supply cord, measured between the point where the cord, or cord guard, enters the appliance, and the entry to the plug does not exceed 2 m (0.5 mm <sup>2</sup> three-core supply flexible cords are not permitted; see AS/NZS 3191). 6 In Footnote c <i>replace</i> 'IEC 60320-1' with 'AS/NZS 60320.1' 7 In Footnote d <i>replace</i> 'IEC 60320-1' with 'AS/NZS 60320.1'		N/A
<b>Annex M</b> <b>Paragraph M.3.2</b>	<b>Protection circuits for batteries provided within the equipment, Test method</b> After the first dashed point <i>add</i> the following Note: NOTE 201: In cases where the voltage source is provided by power from an unassociated power source, consideration should be given to the effects of possible single fault conditions in the unassociated equipment. If the power source is unknown then it should be assumed that the maximum limit of SELV may be applied to the source input under assumed single fault conditions in the source when assessing the charging circuit in the equipment under test.		N/A
	<b>Special national conditions (if any)</b>		--

IEC62368_1D - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
6.201	<p><b>External power supplies, docking stations and other similar devices</b></p> <p>For external power supplies, docking stations and other similar devices, during and after abnormal operating conditions and during single fault conditions the output voltage—</p> <ul style="list-style-type: none"> <li>– at all ES1 outlets or connectors shall not increase by more than 10% of its rated output voltage under normal operating condition; and</li> <li>– of a USB outlet or connector shall not increase by more than 3 V or 10% of its rated output voltage under normal operating conditions, whichever is higher.</li> </ul> <p>For equipment with multiple rated output voltages, the requirements apply with the equipment configured for each rated output voltage in turn.</p> <p>NOTE: This is intended to reduce the possibility of battery fire or explosion in attached equipment or accessories when charging secondary lithium batteries.</p> <p><i>Compliance shall be checked by measurement, taking into account the abnormal operating conditions of Annex B.3 and the simulated single-fault conditions of Annex B.4</i></p>		N/A
6.202	<b>Resistance to fire—Alternative tests</b>		N/A
6.202.1	<p><b>General</b></p> <p>Parts of non-metallic material shall be resistant to ignition and spread of fire.</p> <p>This requirement does not apply to decorative trims, knobs and other parts unlikely to be ignited or to propagate flames from inside the equipment, or the following:</p> <ol style="list-style-type: none"> <li>Components that are contained in an enclosure having a flammability category of V-0 according to AS/NZS 60695.11.10 and having openings only for the connecting wires filling the openings completely, and for ventilation not exceeding 1 mm in width regardless of length.</li> <li>The following parts which would contribute negligible fuel to a fire: <ul style="list-style-type: none"> <li>– small mechanical parts, the mass of which does not exceed 4 g, such as mounting parts, gears, cams, belts and bearings;</li> <li>– small electrical components, such as capacitors with a volume not exceeding 1 750 mm<sup>3</sup>, integrated circuits, transistors and optocoupler packages, if these components are mounted on material of flammability category V-1, or better, according to AS/NZS 60695.11.10.</li> </ul> </li> </ol> <p>NOTE: In considering how to minimize propagation of fire and what 'small parts' are, account should be taken of the cumulative effect of small parts adjacent to each other for the possible effect of propagating the fire from one part to another.</p>		N/A

IEC62368_1D - ATTACHMENT											
Clause	Requirement + Test	Result - Remark	Verdict								
	<i>Compliance shall be checked by the tests of Clauses 6.202.2, 6.202.3 and 6.202.4.</i> For the base material of printed boards, compliance shall be checked by the test of Clause 6.202.5. The tests shall be carried out on parts of non-metallic material which have been removed from the equipment. When the glow-wire test is carried out, the parts shall be placed in the same orientation as they would be in normal use. These tests are not carried out on internal wiring.		N/A								
6.202.2	<b>Testing of non-metallic materials</b> Parts of non-metallic material shall be subject to the glow-wire test of AS/NZS 60695.2.11 which shall be carried out at 550°C. Parts for which the glow-wire test cannot be carried out, such as those made of soft or foamy material, shall meet the requirements specified in ISO 9772 for category FH-3 material. The glow-wire test shall be not carried out on parts of material classified at least FH-3 according to ISO 9772 provided that the relevant part is not thinner than the sample tested.		N/A								
6.202.3	<b>Testing of insulating materials</b> Parts of insulating material supporting Potential Ignition Sources shall be subject to the glow-wire test of AS/NZS 60695.2.11 which shall be carried out at 750°C. The test shall be also carried out on other parts of insulating material which are within a distance of 3 mm of the connection. NOTE: Contacts in components such as switch contacts are considered to be connections		N/A								
	For parts which withstand the glow-wire test but produce a flame, other parts above the connection within the envelope of a vertical cylinder having a diameter of 20 mm and a height of 50 mm shall be subjected to the needle-flame test. However, parts shielded by a barrier which meets the needle-flame test need not be tested		N/A								
	<table><tr><td colspan="2">The needle-flame test shall be made in accordance with AS/NZS 60695.11.5 with the following modifications:</td></tr><tr><td><b>Clause of AS/NZS 60695.11.5</b></td><td>Change</td></tr><tr><td><b>9 Test procedure</b></td><td></td></tr><tr><td><b>9.2 Application of needle-flame</b></td><td><i>Delete</i> the first and second paragraphs and <i>replace</i> with the following: The specimen shall be arranged so that the flame can be applied to a vertical or horizontal edge as</td></tr></table>	The needle-flame test shall be made in accordance with AS/NZS 60695.11.5 with the following modifications:		<b>Clause of AS/NZS 60695.11.5</b>	Change	<b>9 Test procedure</b>		<b>9.2 Application of needle-flame</b>	<i>Delete</i> the first and second paragraphs and <i>replace</i> with the following: The specimen shall be arranged so that the flame can be applied to a vertical or horizontal edge as		N/A
The needle-flame test shall be made in accordance with AS/NZS 60695.11.5 with the following modifications:											
<b>Clause of AS/NZS 60695.11.5</b>	Change										
<b>9 Test procedure</b>											
<b>9.2 Application of needle-flame</b>	<i>Delete</i> the first and second paragraphs and <i>replace</i> with the following: The specimen shall be arranged so that the flame can be applied to a vertical or horizontal edge as										

IEC62368_1D - ATTACHMENT				
Clause	Requirement + Test		Result - Remark	Verdict
		shown in the examples of Figure 1. If possible the flame shall be applied at least 10 mm from a corner.  The duration of application of the test flame shall be 30 s ± 1 s.		
	9.3 Number of test specimens	Replace with the following: The test shall be made on one specimen. If the specimen does not withstand the test, the test may be repeated on two further specimens, both of which shall withstand the test.		
	11 Evaluation of test results	Replace with the following: The duration of burning (tb) shall not exceed 30 s. However, for printed circuit boards, it shall not exceed 15 s.		
	The needle-flame test shall not be carried out on parts of material classified as V-0 or V-1 according to AS/NZS 60695.11.10, provided that the relevant part is not thinner than the sample tested.			
6.202.4	Testing in the event of non-extinguishing material  If parts, other than enclosures, do not withstand the glow wire tests of Clause 6.202.3, by failure to extinguish within 30 s after the removal of the glowwire tip, the needle-flame test detailed in Clause 6.202.3 shall be made on all parts of non-metallic material which are within a distance of 50 mm or which are likely to be impinged upon by flame during the tests of Clause 6.202.3. Parts shielded by a separate barrier which meets the needle-flame test need not be tested. NOTE 1: If the enclosure does not withstand the glow-wire test the equipment is considered to have failed to meet the requirements of Clause 6.202 without the need for consequential testing. NOTE 2: If other parts do not withstand the glow-wire test due to ignition of the tissue paper and if this indicates that burning or glowing particles can fall onto an external surface underneath the equipment, the equipment is considered to have			N/A

IEC62368_1D - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>failed to meet the requirements of Clause 6.202 without the need for consequential testing.</p> <p>NOTE 3: Parts likely to be impinged upon by the flame are considered to be those within the envelope of a vertical cylinder having a radius of 10 mm and a height equal to the height of the flame, positioned above the point of the material supporting, in contact with, or in close proximity to, connections.</p>		
6.202.5	<p><b>Testing of printed boards</b></p> <p>The base material of printed boards shall be subjected to the needle-flame test of Clause 6.202.3. The flame shall be applied to the edge of the board where the heat sink effect is lowest when the board is positioned as in normal use. The flame shall not be applied to an edge, consisting of broken perforations, unless the edge is less than 3 mm from a potential ignition source.</p> <p>The test is not carried out if—</p> <ul style="list-style-type: none"> <li>– the printed board does not carry any potential ignition source;</li> <li>– the base material of printed boards, on which the available apparent power at a connection exceeds 15 VA operating at a voltage exceeding 50 V and equal or less than 400 V (peak) a.c. or d.c. under normal operating conditions, is of flammability category V-1 or better according to AS/NZS 60695.11.10, or the printed boards are protected by an enclosure meeting the flammability category V-0 according to AS/NZS 60695.11.10, or made of metal, having openings only for connecting wires which fill the openings completely; or</li> <li>– the base material of printed boards, on which the available equipment power at a connection exceeds 15 VA operating at a voltage exceeding 400 V (peak) a.c. or d.c. under normal operating conditions, and base material of printed boards supporting spark gaps which provides protection against overvoltages, is of flammability category V-0 according to AS/NZS 60695.11.10 or the printed boards are contained in a metal enclosure, having openings only for connecting wires which fill the openings completely.</li> </ul> <p><i>Conformance shall be determined using the smallest thickness of the material.</i></p> <p>NOTE: Available apparent power is the maximum apparent power which can be drawn from the supplying circuit through a resistive load whose value is chosen to maximize the apparent power for more than 2 min when the circuit supplied is disconnected.</p>		N/A
6.202.6	<p><b>For open circuit voltages greater than 4 kV</b></p> <p>Potential ignition sources with open circuit voltages exceeding 4 kV (peak) a.c. or d.c. under normal operating conditions shall be contained in a FIRE ENCLOSURE which shall comply with flammability category V-1 or better according to AS/NZS 60695.11.10.</p>		N/A

IEC62368_1D - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
8.6.1.201	<p><b>8.6.1.201 Instructional safeguard for fixed-mount television sets</b></p> <p>MS2 and MS3 television sets and display devices designed only for fixed mounting to a wall of ceiling or equipment rack shall, where required in Table 36, footnote 201, have an instructional safeguard in accordance with Clause F.5 which may be on the equipment or included in the installation instructions or equivalent document accompanying the equipment.</p> <p>The elements of the instructional safeguard shall be as follows:</p> <ul style="list-style-type: none"> <li>– element 1a: not available;</li> <li>– element 2: 'Stability Hazard' or equivalent wording;</li> <li>– element 3: 'The television set may fall, causing serious personal injury or death' or equivalent text;</li> <li>– element 4: the following or equivalent text: To prevent injury, this television set must be securely attached to the floor/wall in accordance with the installation instructions</li> </ul>		N/A
8.6.1.202	<p><b>Restraining device</b></p> <p>MS2 and MS3 television sets and display devices that are not solely fixed-mounted should be provided with a restraining device such as a fixing point to facilitate restraining the equipment from toppling forward. The restraining device shall be capable of withstanding a pull of 100 N in all directions without damage.</p> <p>Where a restraining device is provided, instructions shall be provided in the instructions for installation or instructions for use to ensure correct and safe installation.</p>		N/A



AS_NZS_3112:2017_Appendix J ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

<b>ATTACHMENT TO TEST REPORT</b> <b>AS_NZS_3112:2017_+A1:2021 Appendix J</b> <b>AUSTRALIAN / NEW ZEALAND NATIONAL DIFFERENCES</b> <b>(Approval and test specification—Plugs and socket-outlets)</b>		
<b>Differences according to</b> ..... : AS_NZS_3112:2017_Amendment 1:2021_Appendix J		
<b>TRF template used</b> ..... : IEC EE OD-2020-F3, Ed. 1.1		
<b>Attachment Form No</b> ..... : AS_NZS_3112:2017_Appendix J		
<b>Attachment Originator</b> ..... : JAS-ANZ		
<b>Master Attachment</b> ..... : 2021-11		
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<b>NOTE</b>	<b>This TRF only relates to Appendix J requirements</b>	N/A
	<b>National Differences</b>	N/A
	APPENDIX J INTEGRAL OR DETACHABLE PLUG PORTIONS OF EQUIPMENT FOR INSERTION INTO SOCKET-OUTLETS	N/A
J1 SCOPE	<p>General: This Appendix specifies additional dimensional and constructional requirements for detachable plug portions, or equipment incorporating integral supply pins or equipment incorporating detachable plug portions.</p> <p>This Appendix shall be read in conjunction with Section 2 of this Standard.</p> <p>For the purposes of this Appendix, where the term 'plug' is used in Section 2 it shall be taken to mean the plug portion of equipment or the detachable plug portion.</p> <p>The equipment shall comply with the relevant product Standard. The tests and requirements specified in this Appendix are in addition to any test and requirements of the relevant product Standard for the equipment. (AS/NZS 3112:2017/A1:2021)</p>	N/A

J2	DEFINITION	N/A
J2.1	<p>Detachable plug portion</p> <p>A plug portion that is detachable from the equipment and with connections including the following standardized outputs and other contacts</p> <p>(a) Type A (see Figure J1):</p> <p>A detachable plug portion with a connection intended for plugging directly into equipment. The connection being via the equipment group 1 appliance inlet within the scope of AS/NZS 60320.1.</p> <p>(b) Type B (see Figure J2):</p> <p>A detachable plug portion with a non-standardized connection intended for plugging directly into equipment</p>	N/A

IEC62368_1D - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	(c) Type C (see Figure J3):  A detachable plug portion with a connection intended for use with an adaptor connected to a flexible cord so as to replicate a supply plug and flexible cord configuration. The connection being via a group 1 appliance outlet within scope of AS/NZS 60320.2.2, which is integral with the plug portion (AS/NZS 3112:2017)		
J2.2	Integral plug portion A plug portion that is integral to the equipment enclosure and is not detachable (AS/NZS 3112:2017)		N/A
J2.3	Plug portion A plug portion is that portion of equipment with pins for insertion into a socket-outlet, including the plug pins, terminals of the plug pins, external dimensions of the 'maximum projection' and any connections of a detachable plug portion. (AS/NZS 3112:2017/A1:2021)		N/A

<b>J3</b>	<b>REQUIREMENTS FOR THE PLUG PORTION</b>	N/A
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J3.1	General The following provisions apply to the dimensional and constructional requirements of plug portions of equipment and any detachable connection between the plug portion and the equipment:		N/A
(a)	For detachable plug portions intended for connection to the equipment in multiple orientations, the relevant tests are performed in the most onerous orientation.		N/A
(b)	For Type A detachable plug portion, the relevant requirements of AS/NZS 3105:2014 are applicable, in addition to conformance with relevant clauses of this Appendix		N/A
(c)	For Type B detachable plug portions, the conformance is shown by the relevant clauses of this Appendix.		N/A
(d)	For Type C detachable plug portions, conformance is shown by assessment to Section 2 of this Standard (plugs) and relevant clauses of this Appendix  (AS/NZS 3112:2017)		N/A

J3.2	<b>Plug pins of plug portions</b> The requirements of Clause 2.2 are applicable for plug pins.	N/A
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IEC62368_1D - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
2.2	PLUG PINS		N/A
2.2.1	Current carrying parts of plug pins of metal having sufficient mechanical strength, electrical conductivity and resistance to corrosion adequate for the intended use		N/A
	Plug pin material?		
2.2.2	Pins that may become detached from plug yet remain attached to cord conductors; not possible for plug to be assembled with any pin located in a position other than that intended		N/A
	Plug made of resilient insulating material; pins and terminals held securely in position (AS/NZS 3112:2017)		N/A

2.2.3	Plug pins adequately proportioned throughout and portion adjacent to the connection designed to not introduce a stress concentration which may lead to a fracture of the pin, and suitably shaped to prevent abrasion or cutting of conductor strands due to flexure in normal use		N/A
	Exposed ends of plug pins have a lead-in, bevel or radius to facilitate entry into socket-outlets and to operate shutters		N/A
	Round pins have a semi-circular end profile		N/A
	Flat-pins with the following profile are deemed to comply:		--
(a)	Flat-pins with a radius on the end with side bevels may have a width and thickness profile as specified in Figure 2.1(h)		N/A
(b)	Flat-pins square on the end with corner and side bevels may have a width and thickness profile as specified in Figure 2.1(i)		N/A
(c)	Flat-pins square on the end with corner bevels and a radius on the sides may have a width and thickness profile as specified in Figure 2.1(j)		N/A
	Contact portion of the pins smooth and free from openings or indentations		N/A
	Flat pin plugs having a longitudinal seam or opening in the contact portion of one face; width not exceeding 0.3 mm and		N/A
	Thickness not exceeding 1.58 mm		N/A
	Exposed portion of earthing pins and pins other than insulated pins free from any non-metallic coverings or coatings (AS/NZS 3112:2017)		N/A

IEC62368_1D - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
2.2.4	Live parts of insulated pin plugs not exposed when plug is partially or fully engaged with associated socket		N/A
	Compliance by measurement to Figure 2.4	(see appended table)	N/A
	Lacquer, enamel or sprayed insulating coating not considered to be insulation material		N/A
	All live pins on low voltage plugs except for those shown in Figure 2.1 (a2), (b) and (g) of the insulated pin type		N/A
	Colour green or green / yellow not used for insulation of insulated pins (AS/NZS 3112:2017)		N/A

J3.3	<b>Ratings and dimensions for low-voltage plug portions</b> Requirements of clauses 2.8.1 and 2.8.4 apply for rating and dimensions	N/A
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2.8	Ratings and Dimensions of Low Voltage Plugs		N/A
2.8.1	Low voltage flat-pin plugs and low voltage plugs having one round earth pin and two flat pins or two round live pins and one flat earth pin, having ratings up to and including 20A; compliance with Figure 2.1	(see appended results)	N/A
	Rating of plug	___A	--
	Nominal dimensions covering disposition of pins checked by gauge of Appendix A		N/A
	Distance between live pin and edge of moulding to not less than 9 mm		N/A
	Measured distance	___mm	--
	No point on plug face protrudes more than 0.5 mm		N/A
	Measured protrusion	___mm	--
	Dimensional requirements of Figure 2.1(e2) did not applied to plugs with greater than three pins (AS/NZS 3112:2017)		N/A
2.8.4	Low voltage plugs comply with dimensions of Figure 2.1	(see appended table 2.8.1)	N/A
	Disposition of pins checked by gauge complying with Appendix A, B or F as appropriate		N/A

IEC62368_1D - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	Low voltage plug having rating up to 15A and of the Figure 2.1 (a1), (c), (d), (f) or (g) type; comply with dimensional requirements of Figure 2.1 (e1 and e2)		N/A
	20A plug of Figure 2.1(a2) type complies with dimensional requirements of Figure 2.1 (e2)		N/A
	Plugs with insulated pins need not comply with dimension R20.0 $\pm$ 1 mm requirement of Figure 2.1 (e3) provided there is at least 9mm from the edge of the live pins to the edge of the plug face Figure 2.1(e3). (AS/NZS 3112:2017)		N/A

J3.4	<b>Internal connections for plug portions</b> Requirements of clause 2.9 apply for internal connections; unless requirements contained in the relevant product standard (AS/NZS 3112:2017)	N/A
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2.9	INTERNAL CONNECTIONS		N/A
	Plug provided with earthing connections designed and constructed so that when plug is correctly wired and assembled:		N/A
(a)	Loose terminal screw or conductive material cannot bridge any live or earthed parts		N/A
(b)	Earthing parts effectively isolated from contact with live conductor which may become detached		N/A
(c)	Live parts effectively isolated from contact with any earthing conductor which may become detached		N/A
	Any connections for auxiliary devices comply with above requirements (AS/NZS 3112:2017)		N/A

J3.5	<b>Arrangement of earthing connections for plug portions</b> Requirements of clause 2.10 apply for arrangement of earthing connections	N/A
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2.10	Arrangement of earthing connections		N/A
	Earthing pin radial to the circle embracing the pins (AS/NZS 3112:2017)		N/A

IEC62368_1D - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

J3.6	<b>Configuration of plug portions</b> Requirements of clause 2.12.6 apply for configuration of the plug portion (AS/NZS 3112:2017)		N/A
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2.12	Marking		--
2.12.6	Configuration of plugs		N/A
	Pins disposed so that configuration, as viewed from the pins, is earth, neutral and active in a clockwise direction		N/A
	Where there is no earthing pin; live pins conform to this configuration (AS/NZS 3112:2017)		N/A

J4	<b>Tests</b>		N/A
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J4.1	<b>General</b>  Plug portions of equipment shall be subjected to the following tests and unless stated otherwise, shall comply with the requirements specified in Section 2 for each test. The number of test samples shall be in accordance with Table J1  For equipment with a detachable plug portion, the assessment(s) of Table J1 _tests 2, 3, 5, 10 and 11 shall be conducted on the—  (a) assembled equipment with the detachable plug portion connected; and (b) the detachable plug portion after it has been separated from the equipment  (AS/NZS 3112:2017/A1:2021)		N/A
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J4.2	<b>High voltage test</b>  The requirements of Clause 2.13.3 are applicable unless requirements are contained in the relevant product standard (AS/NZS 3112:2017)		N/A
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2.13.3	Test No.1 - High voltage test		N/A
	Plug withstands without failure electric strength test as specified (AS/NZS 3112:2017)	(see appended table)	N/A

J4.3	<b>Mechanical strength</b>		N/A
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IEC62368_1D - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
J4.3.1	<p><b>Tumbling barrel test</b></p> <p>□The tumbling barrel test is applied to determine the mechanical strength of the plug portions and equipment having integral or detachable plug portions.</p> <p>For equipment with a detachable plug portion, the detachable plug portion may become detached during the test. If this occurs the detachable plug portion shall be reassembled with the equipment when the pins are straightened as per (a) and (b) below. □</p> <p>Three samples that have not been subjected to any previous test are tested to the requirements of <a href="#">Clause 2.13.7.1</a>, however the test is modified as follows:</p>		N/A
	<p>A sample is dropped—</p> <p>(a) 500 times if the mass of the specimen does not exceed 250 g.</p> <p>The pins being straightened after each 100 drops and at the completion of the test to pass through the appropriate gauge of <a href="#">Figure A1</a>, <a href="#">Figure B1</a> or <a href="#">Figure F1</a>; and</p> <p>(b) 250 times if the mass of the specimen exceeds 250 g. The pins being straightened after each 25 drops and at the completion of the test to pass through the appropriate gauge of <a href="#">Figures A1</a>, <a href="#">Figure B1</a> or <a href="#">Figure F1</a>.</p> <p>(AS/NZS 3112:2017/A1:2021)</p>		N/A

2.13.7.1	Test No.2 – Tumbling barrel test		N/A
	Three plugs tested as specified in tumbling barrel as specified		N/A
	Mass of sample	grams	--
	Number of drops	500 / 250	--
	After the test, samples show no damage and in particular:		N/A
(a)	Live parts not exposed to the standard test finger		N/A
(b)	Earth pin resistance complies with clause 3.14.7; resistance not exceeding 0.1 Ω		N/A
	Measured earth pin resistance	___Ω	--
(c)	Functions affecting safety not impaired		N/A
(d)	No live part detached or loosened		N/A
(e)	Pins not broken or showing signs of cracking (AS/NZS 3112:2017)		N/A

J4.3.2	<p><b>Test No.3 Impact test.</b></p> <p>Plug portions and equipment having integral plug portions or detachable plug portions shall withstand lateral impact forces.</p> <p>All samples that were subjected to the tests in <a href="#">Paragraph J4.3.1</a> shall be tested as follows:</p>		N/A
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IEC62368_1D - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	(a) The sample shall be positioned at the centre of a steel plate with a thickness of at least 6 mm. Apertures in the steel plate for the plug pins to pass through shall conform to the corresponding socket Standard. The sample shall be held against the steel plate by clamping all the pins.		N/A
	(b) Samples shall be subjected to blows, with an impact energy of $1.0 \pm 0.05$ J by any means having the same performance as the spring-operated impact-test apparatus of AS/NZS 3100.		N/A
	(c) Three blows shall be applied to every point that is most likely to directly or indirectly stress the enclosure joints of the sample		N/A
	Compliance shall be checked by <a href="#">Paragraph J4.3.3</a>		N/A

J4.3.3	<b>Specific compliance criteria</b> This Paragraph provides the common compliance assessment criteria for tests specified in Paragraphs <a href="#">J4.3.1</a> and <a href="#">J4.3.2</a> .		N/A
	For equipment with an integral plug portion, the assessment(s) shall be made on the complete equipment.		N/A
	For equipment with a detachable plug portion, the assessment(s) shall be conducted on the—  (a) assembled equipment with the detachable plug portion connected; and  (b) the detachable plug portion after it has been separated from the equipment		N/A
	Following each test the samples shall comply with <a href="#">Clause 2.13.7.1</a>		N/A
	(a) assembled equipment with the detachable plug portion connected;		N/A
	(a) Live parts shall not have become exposed to the standard test finger.		N/A
	(b) For earth pins, the resistance of the plug/socket-outlet circuit shall be such that conformance with <a href="#">Clause 3.14.7</a> is maintained The resistance shall not exceed 0.1 $\Omega$ .	___ $\Omega$ .	N/A
	(c) Any other function affecting safety shall not be impaired		N/A
	(d) No live part shall have become detached or loosened, to the extent that a hazardous situation is created		N/A
	The sample shall conform to the 'Guarding of live parts' requirements of AS/NZS 3100:2015 cl 5.1.		N/A



IEC62368_1D - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	Following each test, no internal conductive material or conductive part shall have become detached or loosened, to the extent that it creates a hazardous situation. The sample shall conform to the 'Separation of live parts from non-current-carrying conductive parts' requirements of AS/NZS 3100. <i>NOTE Specific attention is drawn to the separation of any live parts to exposed metal parts or low voltage to extra low voltage parts.</i>		N/A
	(e) The pins shall be inspected with normal, or corrected to normal, vision. Insulation may be removed if necessary. Pins shall not be broken or show cracking.		N/A
	(b) the detachable plug portion after it has been separated from the equipment.		N/A
	(a) Live parts shall not have become exposed to the standard test finger.		N/A
	(b) For earth pins, the resistance of the plug/socket-outlet circuit shall be such that conformance with <a href="#">Clause 3.14.7</a> is maintained The resistance shall not exceed 0.1 $\Omega$ .	___ $\Omega$ .	N/A
	(c) Any other function affecting safety shall not be impaired		N/A
	(d) No live part shall have become detached or loosened, to the extent that a hazardous situation is created		N/A
	(e) The pins shall be inspected with normal, or corrected to normal, vision. Insulation may be removed if necessary. Pins shall not be broken or show cracking.		N/A
	The sample shall conform to the 'Guarding of live parts' requirements of AS/NZS 3100:2015 cl 5.1.		N/A
	Following each test, no internal conductive material or conductive part shall have become detached or loosened, to the extent that it creates a hazardous situation. The sample shall conform to the 'Separation of live parts from non-current-carrying conductive parts' requirements of AS/NZS 3100. <i>NOTE Specific attention is drawn to the separation of any live parts to exposed metal parts or low voltage to extra low voltage parts.</i>  (AS/NZS 3112:2017/A1:2021)		N/A

IEC62368_1D - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

J4.3.4	<b>Pin bending test</b> The pins of the plug portion of three samples not subjected to any previous tests shall be tested for compliance with the pin bending test of <a href="#">Clause 2.13.7.2</a> (AS/NZS 3112:2017/A1:2021)		N/A
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2.13.7.2	Test No.4 – Pin bending test		N/A
	All flat-pin plugs rated up to and including 15 A shall be subjected to the pin bending test		N/A
	Three samples are subjected by clamping the plug in a rigid holding block and applying the bending force as specified		N/A
	After the test the pins shall not be broken off. (AS/NZS 3112:2017)		N/A

J4.8.3	Test No.5 <b>Plug portion detachment requirements</b>		N/A
	For all Type B or C devices and for Type A devices where the outlet of the detachable plug portion is parallel to the plug supply pins, disengagement of the detachable plug portion from the equipment shall require at least two simultaneous independent actions or the use of a tool.		N/A
	Disengagement of the detachable plug portion requires two simultaneous independent actions, or		N/A
	The plug portion and the equipment/adaptor shall be connected and disconnected 50 times (100 strokes).		N/A
	Compliance is verified by inspection and the plugging test.		N/A
	During the test plug portion was not separated		N/A
	The test of AS/NZS 3112 'temperature rise test' for plugs shall be conducted immediately after the above test without disturbing the sample. (AS/NZS 3112:2017/A1:2021)		N/A

J4.4	<b>Temperature rise test</b> The relevant requirements of <a href="#">Clause 2.13.8</a> are applicable for the temperature rise test, except that the test current shall be that specified in the relevant product standard		N/A
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IEC62368_1D - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	The temperature rise of the pins shall not exceed 45 K irrespective of the temperature rise of parts specified in end-product standards.		N/A
	For detachable plug portions the temperature rise of terminals and contacts shall not exceed 45 K. (AS/NZS 3112:2017)		N/A

2.13.8	Test No.6 – Temperature rise test		N/A
(a)	Non-rewireable plugs tested as delivered with minimum cross-sectional area of conductor size for each respective current rating		N/A
(b)	Rewireable plugs fitted with PVC flexible cords having minimum cross-sectional area specified in manufacturer's instructions		N/A
	Terminal screws or nuts tightened with torque equal to two-thirds of value specified in Table 2.2.		N/A
	Conductors have length of at least 1 m		N/A
	Plug tested in draught free environment as specified using clamping units as specified in Figure 2.10		N/A
	Plug fitted with cord and inserted into socket-outlet as specified		N/A
	Test Current		N/A
	Temperature of terminals and contacts of detachable plug portion not exceeding 45 K (AS/NZS 3112:2017)	(see appended table)	N/A

J4.5	<b>Securement of pins of the plug portion</b> The requirements of <a href="#">Clause 2.13.9</a> are applicable for the securement of pins. (AS/NZS 3112:2017)	N/A
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2.13.9	Test No.7. Securement of pins		N/A
2.13.9.1	Movement of pins		N/A
	Plug pins clamped $5 \pm 0.5$ mm from pin face; test equipment and sample pre-conditioning for 1 h at $40 \pm 1^\circ\text{C}$		N/A
	Force of $18 \pm 1$ N applied to pin $14 \pm 0.5$ mm from plug face; applied gradually over 10 s and maintained for 10 s; applied in four directions		N/A

IEC62368_1D - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	Maximum deflection during test not exceeding 2.0 mm	(see appended results)	N/A
	Any distortion 5 minutes after test does not prevent insertion of plug into standard gauge(s) (AS/NZS 3112:2017 + A1:2021)		N/A
2.13.9.2	Fixing of pins		N/A
	Plug heated to $50 \pm 2^\circ\text{C}$ for 1 h		N/A
	Force of $60 \pm 0.6$ N applied to each pin over 10 s and maintained for 10 minutes; applied in two directions along length of pin		N/A
	Maximum displacement during test not exceeding 2.4 mm		N/A
	Maximum measured displacement		--
	Pin returns to within 0.8 mm of nominal length within 5 minutes of removal of test force (AS/NZS 3112:2017)		N/A

J4.6	<b>Tests on the insulation material of insulated pin-plug portions</b> The requirements of <a href="#">Clause 2.13.13</a> are applicable for insulating material of insulated plug pins. (AS/NZS 3112:2017)	N/A
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2.13.13	Test No.8 Tests for insulation material of insulated pin plugs		N/A
2.13.13.1	Material of pin-insulation resistant to stresses at temperature likely to occur		N/A
2.13.13.2	Pressure test at high temperature		N/A
	Specimen tested as per Figure 2.5 with force of 2.5 N applied as specified; maintained for 2 h at $160 \pm 5^\circ\text{C}$ ; removed and cooled by immersion in water within 10 s		N/A
	Thickness of insulation at point of impression not reduced by more than 50%		N/A
	Initial thickness	mm	--
	Thickness after test	mm	--
	No visible cracks on insulation material		N/A
	Dimension of insulating material not below minimum size in Figure 2.4 (AS/NZS 3112:2017)		N/A

IEC62368_1D - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
2.13.13.3	Static damp heat test		N/A
	Specimen subjected to two damp heat cycles in accordance with AS 60068.2.30; Db (12 + 12h), 95% RH, 25 ± 3°C; 40°C		N/A
	After this treatment and recovery to room temperature; specimen subjected to:		N/A
(a)	Insulation resistance test in accordance with clause 2.13.2 (e)	(see appended table)	N/A
(b)	High voltage test in accordance with clause 2.13.3	(see appended table)	N/A
(c)	Abrasion test in accordance with clause 2.13.13.6		N/A
2.13.13.4	Low temperature test		N/A
	Plug maintained at -15 ± 2°C for minimum of 24 h and returned to room temperature; after which specimen subjected to:		N/A
(a)	Insulation resistance test in accordance with clause 2.13.2 (e)	(see appended table)	N/A
(b)	High voltage test in accordance with clause 2.13.3	(see appended table)	N/A
(c)	Abrasion test in accordance with clause 2.13.13.6		N/A
2.13.13.5	Impact test at low temperature		N/A
	Specimen maintained at -15 ± 2°C for 24 h		N/A
	Specimen placed in position and subjected to impact test as per Figure 2.6; mass of 100 ± 1 g falling through 100 mm		N/A
	Four impacts applied; specimen rotated through 90° between impacts		N/A
	After return to room temperature; no visible cracks of insulating material		N/A
2.13.13.6	Abrasion test		N/A
	Plug held in clamp and tested as per Figure 2.7; pin loaded at 4 N; 20 000 movements		N/A
	After test; pins show no damage affecting safety or impairing further use of the plug		N/A
	Insulating sleeve not punctured or rucked up (AS/NZS 3112:2017)		N/A

J4.7	Test no.9 <b>Equipment with a plug portion intended to be supported by the contacts of a socket-outlet</b>		N/A
	Equipment with pins intended to be introduced into fixed socket-outlets not imposing undue strain on socket-outlet		N/A
	Applied torque not exceeding 0.25 Nm		N/A

IEC62368_1D - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	Measured torque (AS/NZS 3112:2017)	Nm	--

J4.8	<b>Additional requirements for detachable plug portions</b>		N/A
J4.8.1	Test no.10 <b>Access to live parts</b>		N/A
	Small test finger of Figure 13 of IEC 61032 was not possible to contact live parts with the force of 20N		N/A
	incorrectly assemble the plug portion was not possible (AS/NZS 3112:2017)		N/A

J4.8.2	Test No.11 <b>Construction of detachable contacts where the input current of the equipment exceeds 0.2 A</b>		N/A
	Contacts of the equipment shall be such that they make and maintain, under normal service conditions, satisfactory electrical and mechanical contact with the corresponding contact of the detachable plug portion.		N/A
	For connections intended to accommodate pins, contact shall be made on two surfaces diametrically opposite, except if a single spring-assisted contact is used.		N/A
	Contacts shall not rely exclusively on the resilience of the contact material and shall have an opposite face of material other than thermoplastic or resilient insulating material.		N/A
	The alignment and contact-making properties of contacts shall be independent of terminal screws		N/A
	The effectiveness of the contacts shall be independent of pressure from any thermoplastic or resilient moulding.□		N/A
	Effectiveness of the contacts independent of pressure from thermoplastic or resilient moulding checked by J4.8.3		N/A
	Visual inspection to determine interference between metal contacts and thermoplastic or resilient moulding to provide supplementary contact pressure to metal contacts  (AS/NZS 3112:2017)		N/A

IEC62368_1D - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
J4.8.4	<b>Resistance of insulating material to heat and fire</b>		N/A
J4.8.4.1	Test no.12 Resistance to heat For Type B detachable plug portions parts of non-metallic material, parts of insulating material supporting live parts including connections, and parts of thermoplastic material providing supplementary insulation or reinforced insulation, shall be sufficiently resistant to heat if their deterioration could cause the appliance to fail to comply with this Standard.		N/A
	Ball pressure test at		N/A
(a)	75°C ± 2°C, for external parts;		N/A
(b)	125°C ± 2°C, for parts supporting live parts.		N/A
J4.8.4.2	Test no.13 <b>Resistance to fire</b>		N/A
	Plug portions comply with resistance to fire requirements of AS/NZS 3100 as follows:		N/A
	The glow wire test temperature 'T' for 'retaining parts' of fixed socket outlets shall be 750 C (AS/NZS 3112:2017)		N/A

## TABLES OF RESULTS

2.2.4	TABLE: Dimensions of insulation on insulated pin plugs		N/A
Dimension (Figure 2.1 designation)		Measured (mm)	Allowed (mm)
Phase pin			8.7 ± 0.5
Neutral pin			8.7 ± 0.5

2.8.1	TABLE: Dimensions of plugs- 10A (a1)		N/A
Dimension (Figure 2.1 designation)		Measured (mm)	Allowed (mm)
Phase and neutral pin width (A)			6.35 ± 0.15
Earth pin width (B)			6.35 ± 0.15
Pin thickness (C)			1.63 + 0.15, -0.05
Pin disposition (D)			checked by test gauge
Pin disposition (E)			checked by test gauge
Phase and neutral pin length (F)			17.06 ± 0.4
Earth pin length (G)			19.94 ± 0.8
Pin boss radius - maximum			21.0 max
Pin boss height			8.6 min

## IEC62368\_1D - ATTACHMENT

Clause	Requirement + Test	Result - Remark	Verdict
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2.8.1	TABLE: Dimensions of plugs- 15A (a1)		N/A
Dimension (Figure 2.1 designation)		Measured (mm)	Allowed (mm)
Phase and neutral pin width (A)			$6.35 \pm 0.15$
Earth pin width (B)			$9.08 \pm 0.15$
Pin thickness (C)			$1.63 + 0.15, -0.05$
Pin disposition (D)			checked by test gauge
Pin disposition (E)			checked by test gauge
Phase and neutral pin length (F)			$17.06 \pm 0.4$
Earth pin length (G)			$19.94 \pm 0.8$
Pin boss radius - maximum			21.0 max
Pin boss height			8.6 min

2.8.1	TABLE: Dimensions of plugs-20A (a2)		N/A
Dimension (Figure 2.1 designation)		Measured (mm)	Allowed (mm)
Phase and neutral pin width (A)			$9.08 \pm 0.15$
Earth pin width (B)			$9.08 \pm 0.15$
Pin thickness (C)			$1.63 + 0.15, -0.05$
Pin disposition (D)			checked by test gauge
Pin disposition (E)			checked by test gauge
Phase and neutral pin length (F)			$17.06 \pm 0.4$
Earth pin length (G)			$19.94 \pm 0.8$
Pin boss radius - maximum			21.0 max
Pin boss height			8.6 min

2.8.1	TABLE: Projection from plug face centroid		N/A
Direction of projection		Measured (mm)	Allowed (mm)
Left			$\leq 21.9$ or $\geq 27.0$
Right			$\leq 21.9$ or $\geq 27.0$
Up			$\leq 21.9$ or $\geq 27.0$
Down			$\leq 21.9$ or $\geq 27.0$

2.13.3	TABLE: Test No. 1 – High voltage test		N/A
Test voltage applied between:		Test voltage (V)	Breakdown
All poles of the plug; taken in pairs		1000	Yes / No
Live poles of the plug and any external metal		3500	Yes / No
Live poles of the plug and the earthing terminal		1000	Yes / No



## IEC62368\_1D - ATTACHMENT

Clause	Requirement + Test	Result - Remark	Verdict
	Live poles of the plug and a flexible electrode	3500	Yes / No
	Live poles and metal foil applied around insulation on pins	1250	Yes / No

2.13.8	TABLE: Test No. 6 - Temperature rise test		N/A
	Ambient temperature	°C	
	Test current	A	
Measured part		dT measured (K)	dT allowed (K)
Active (phase) terminal			45
Neutral terminal			45
Earthing terminal			45

2.13.9.1	TABLE: Movement of pins		N/A
	Earth and neutral pins clamped – phase pin loaded		
Force direction		Measured deflection (mm)	Allowed deflection (mm)
Force towards neutral plane parallel to pin plane			2.0
Force from neutral plane parallel to pin plane			2.0
Force outwards at 90° to pin plane			2.0
Force inwards at 90° to pin plane			2.0

2.13.9.1	TABLE: Movement of pins		N/A
	Phase and neutral pins clamped – earth pin loaded		
Force direction		Measured deflection (mm)	Allowed deflection (mm)
Force inwards parallel to pin plane			2.0
Force outwards parallel to pin plane			2.0
Force towards neutral			2.0
Force towards phase			2.0

2.13.9.1	TABLE: Movement of pins		N/A
	Phase and earth pins clamped – neutral pin loaded		
Force direction		Measured deflection (mm)	Allowed deflection (mm)
Force towards phase plane parallel to pin plane			2.0
Force from phase plane parallel to pin plane			2.0
Force outwards at 90° to pin plane			2.0
Force inwards at 90° to pin plane			2.0

IEC62368_1D - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

2.13.13.3	TABLE: Test No.13(b) – Insulation resistance test after static damp heat test		N/A
Applied between:		Insulation resistance (MΩ)	Minimum required (MΩ)
Live poles and metal foil applied around insulation on pins			5

2.13.13.3	TABLE: Test No.1 – High voltage test after static damp heat test		N/A
Test voltage applied between:		Test voltage (V)	Breakdown
Live poles and metal foil applied around insulation on pins		1250	Yes / No

2.13.13.4	TABLE: Test No.1 – Insulation resistance test after low temperature test		N/A
Applied between:		Insulation resistance (MΩ)	Minimum required (MΩ)
Live poles and metal foil applied around insulation on pins			5

2.13.13.4	TABLE: Test No.1 – High voltage test after low temperature test		N/A
Test voltage applied between:		Test voltage (V)	Breakdown
Live poles and metal foil applied around insulation on pins		1250	Yes / No

J4.8.4.1	TABLE: Test no.12 Resistance to heat		N/A
Component tested		Temperature (°C)	Diameter of impression (mm)

Conformance is checked by subjecting the relevant part to the ball pressure test of IEC 60695-10-2.

J4.8.4.2	TABLE: Test no.13 Resistance to Fire		N/A
	Plug portions shall comply with the requirements for resistance to fire in accordance with AS/NZS 3100:2017 Annex A. The glow-wire test temperature 'T' shall be 750°C.		

Glow-wire testing was conducted in accordance with IEC 60695-2-10 and IEC 60695-2-11.

Test specimens arranged so that the surface in contact with the tip of the glow-wire was vertical and glow wire tip applied to surface of the specimen likely to be subjected to thermal stresses in normal use.

A layer of white pine board and wrapping tissue was placed beneath the sample at 200mm ± 5mm distance.

SPECIMEN NUMBER	1	2	3	4
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IEC62368_1D - ATTACHMENT				
Clause	Requirement + Test	Result - Remark		Verdict
<b>SPECIMEN DESCRIPTION</b>				
Material				
Colour				
Test specimen				
Glow wire tip temperature (°C)	750	750	750	750
Duration of glow wire application (t <sub>a</sub> ) (s)	30	30	30	30
<b>OBSERVATIONS</b>				
Duration from beginning of glow-wire tip application to ignition of specimen or layer (t <sub>i</sub> ) (s)				
Duration from beginning of glow-wire tip application to when flames extinguish (t <sub>e</sub> ) (s)				
Maximum height of flames after initial 1s (to nearest 5 mm) (mm)				
Flame impingement on other parts				
Degree of tip penetration				
Degree of specimen distortion				
Scorching of pinewood board				
<b>EVALUATION CRITERIA</b>				
Visible flame or sustained glowing				
Visible Flame Duration in Seconds during test.				
Duration of flaming or glowing after tip removal (max. allowable 30 s) (s)				
Surrounding parts burned away completely (not permitted)				
Ignition of wrapping tissue layer (not permitted)				
<b>RESULTS</b>				
If parts tested withstand the glow-wire test, but during the test produce a flame that persists for longer than 2 s, then the consequential needle flame test of AS/NZS 3100:2017 Annex A 6.1.5 applies.				

IEC62368_1D - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

LEGEND: CE Complete Equipment SA Sub Assembly

SE Self Extinguished

EBDEmitted Burning Droplets SBD

Specimen Burned and Distorted

SMD

Specimen Melted and Distorted

ME Manually Extinguished SC

Separate Component SS

Specimen Scorched

NA Not Applicable

SCCSpecimen Completely Consumed

WPNI

Wall Penetrated but

no Ignition

NI No Ignition

X Flame Appeared for an Instant

Glow-wire testing was conducted in accordance with IEC 60695-2-10 and IEC 60695-2-11.

Test specimens arranged so that the surface in contact with the tip of the glow-wire was vertical and glow wire tip applied to surface of the specimen likely to be subjected to thermal stresses in normal use. A layer of white pine board and wrapping tissue was placed beneath the sample at 200mm  $\pm$  5mm distance.

SPECIMEN NUMBER	5	6	7	8
SPECIMEN DESCRIPTION				
Material				
Colour				
Test specimen				
Glow wire tip temperature (°C)				
Duration of glow wire application (t <sub>a</sub> ) (s)	30	30	30	30
<b>OBSERVATIONS</b>				
Duration from beginning of glow-wire tip application to ignition of specimen or layer (t <sub>i</sub> ) (s)				
Duration from beginning of glow-wire tip application to when flames extinguish (t <sub>e</sub> ) (s)				
Maximum height of flames after initial 1s (to nearest 5 mm) (mm)				
Flame impingement on other parts				
Degree of tip penetration				
Degree of specimen distortion				
Scorching of pinewood board				
<b>EVALUATION CRITERIA</b>				
Visible flame or sustained glowing				

IEC62368_1D - ATTACHMENT				
Clause	Requirement + Test	Result - Remark		Verdict
Visible Flame Duration in Seconds during test.				
Duration of flaming or glowing after tip removal (max. allowable 30 s) (s)				
Surrounding parts burned away completely (not permitted)				
Ignition of wrapping tissue layer (not permitted)				
<b>RESULTS</b> If parts tested withstand the glow-wire test, but during the test produce a flame that persists for longer than 2 s, then the consequential needle flame test of AS/NZS 3100:2017 Annex A 6.1.5 applies				

LEGEND: CE Complete Equipment SA Sub Assembly

SE Self Extinguished

EBDEmitted Burning Droplets SBD

Specimen Burned and Distorted

SMD

Specimen Melted and Distorted

ME Manually Extinguished SC

Separate Component SS

Specimen Scorched

NA Not Applicable

SCCSpecimen Completely Consumed

WPNI

Wall Penetrated but

no Ignition NI No Ignition

X Flame Appeared for an Inst

IEC62368_1D - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

TABLE: Needle- flame test (NFT)					N/A
Object/ Part No./ Material	Manufacturer/ trademark	Duration of application of test flame (ta); (s)	Ignition of specified layer Yes/No	Duration of burning (tb) (s)	Verdict
Supplementary information: - NFT not relevant (or applicable) for Parts of material classified as V-0 or V-1 - NFT not relevant (or applicable) for Base material of PCBs classified as V-0 or if relevant VTM-0					

## ATTACHMENT Photo Documentation

Report No.: CN24QVA3 001

Type Designation: See test report



Picture 1 – Overall view



Picture 2 – Overall view

## ATTACHMENT      Photo Documentation

Report No.: CN24QVA3 001

Type Designation: See test report



Picture 3 – Overall view



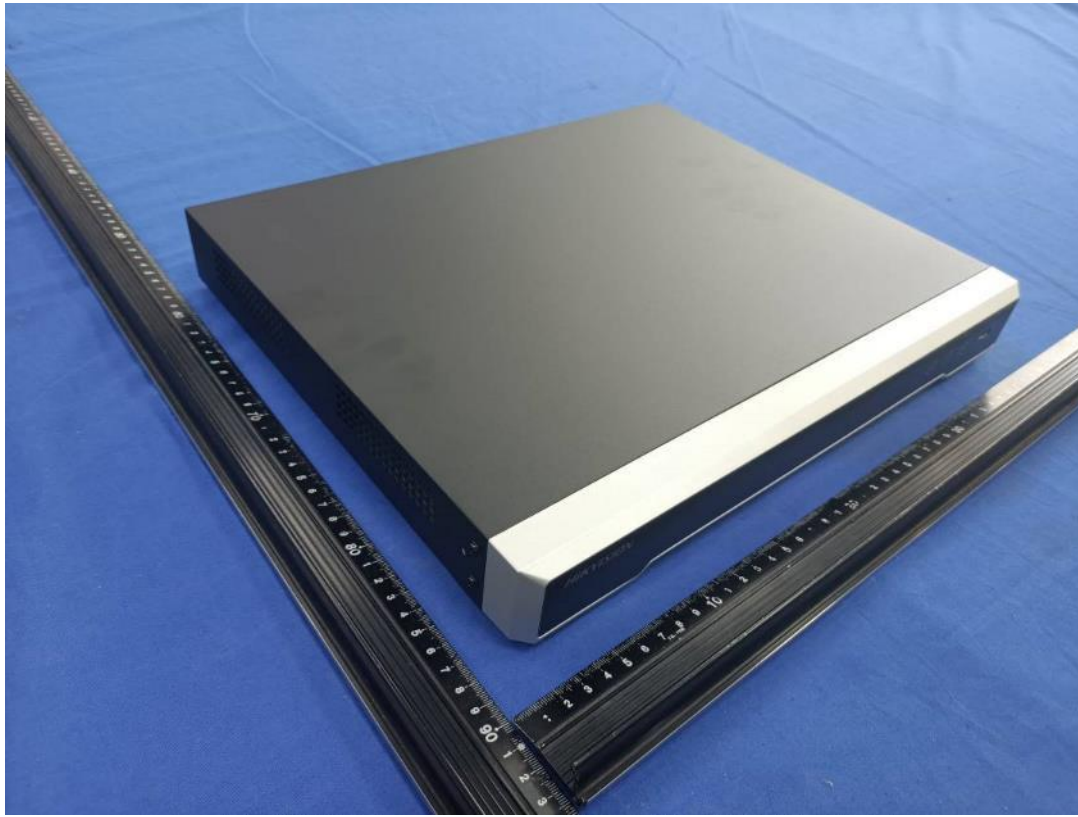
Picture 4 – Overall view (Front view for another type of panel)



## ATTACHMENT Photo Documentation

Report No.: CN24QVA3 001

Type Designation: See test report



Picture 5 – Overall view (Front plastic cover appearance 1)

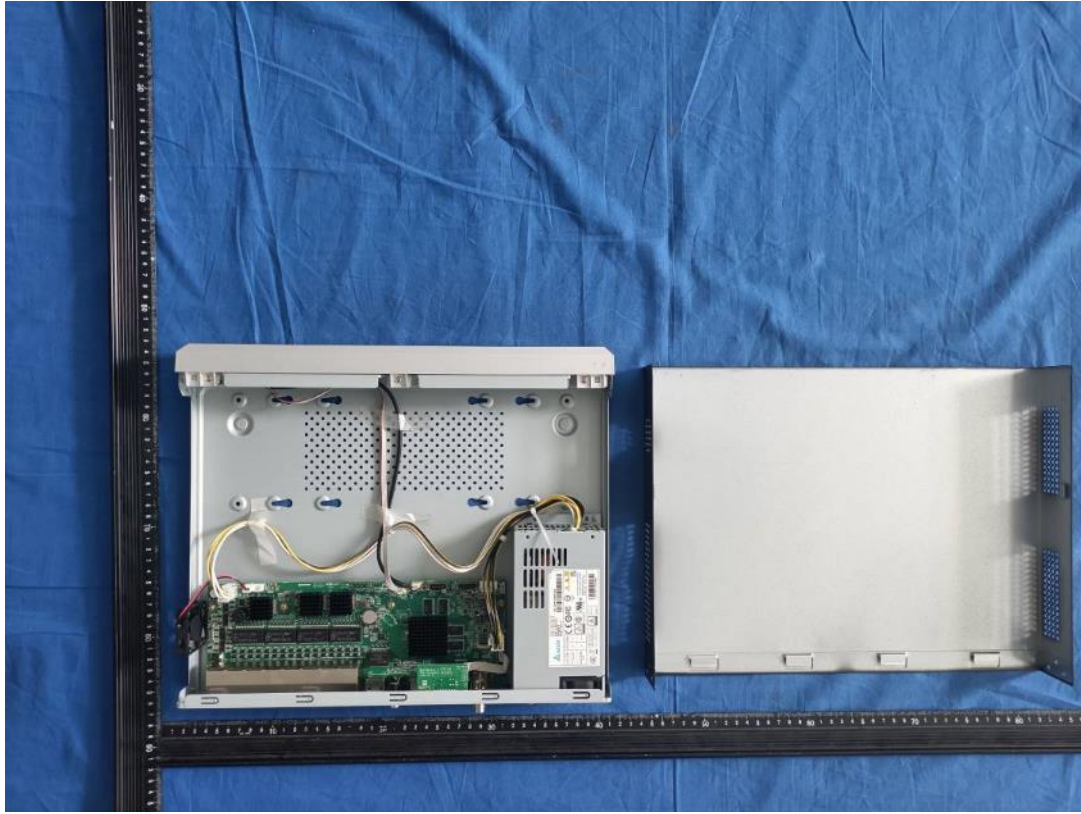


Picture 6 – Overall view (Front plastic cover appearance 2)

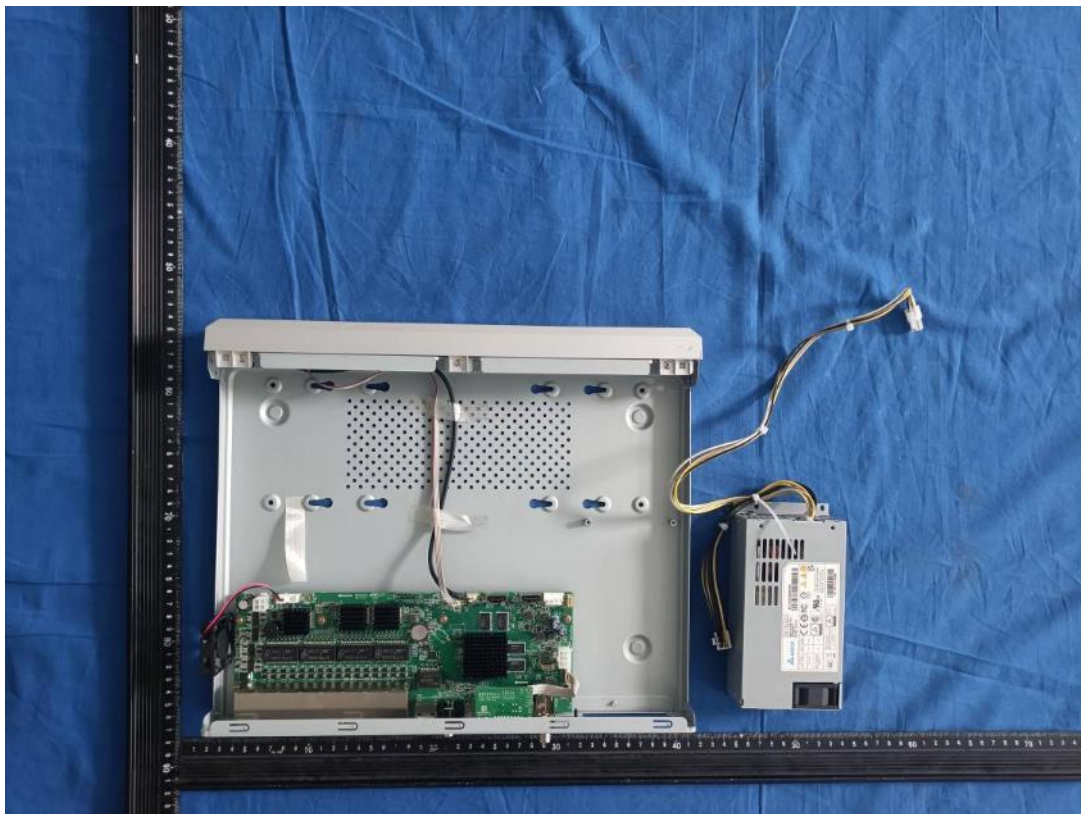
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Picture 7 – Internal view



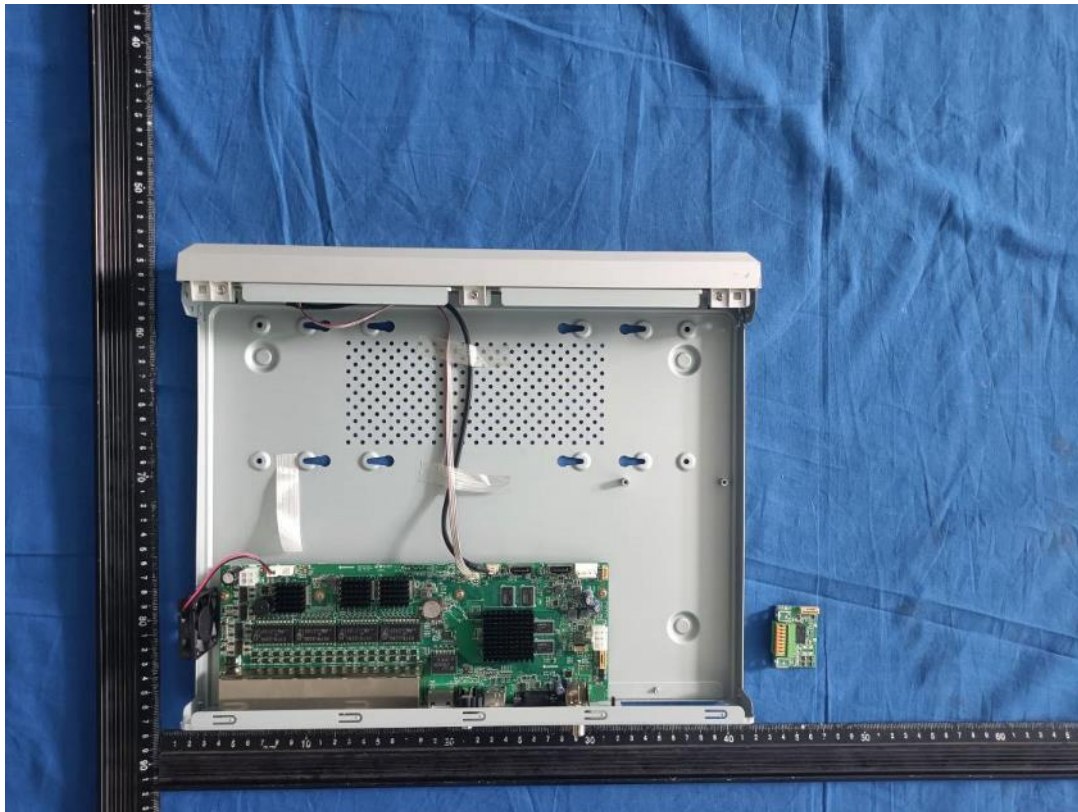
Picture 8 – Internal view



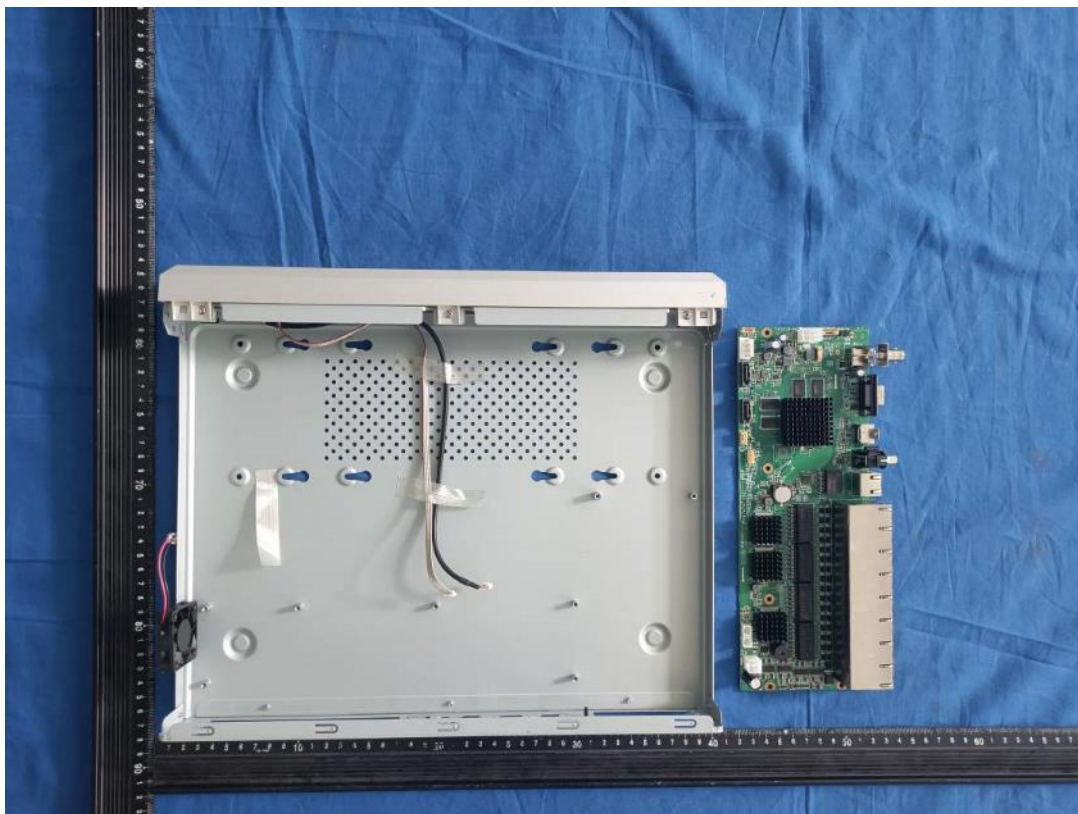
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Picture 9 – Internal view



Picture 10 – Internal view

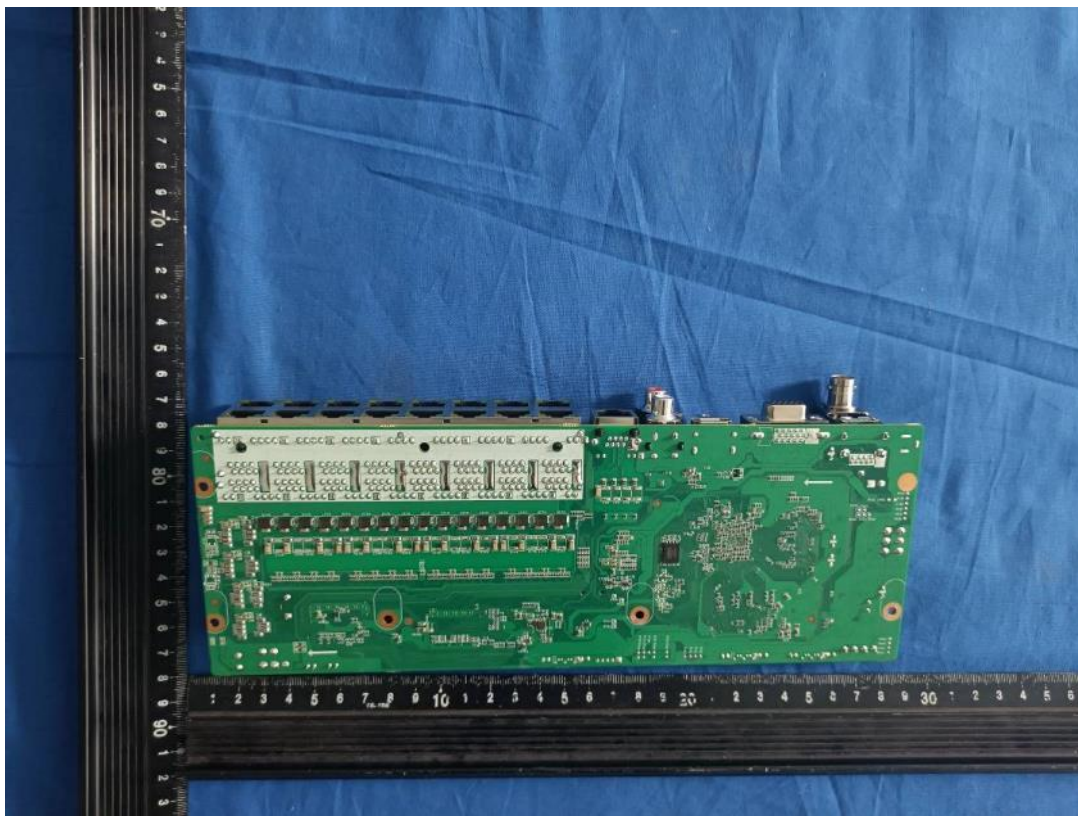
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Picture 11 – Main board view (Model: DS-80500)



Picture 12 – Main board view (Model: DS-80500)



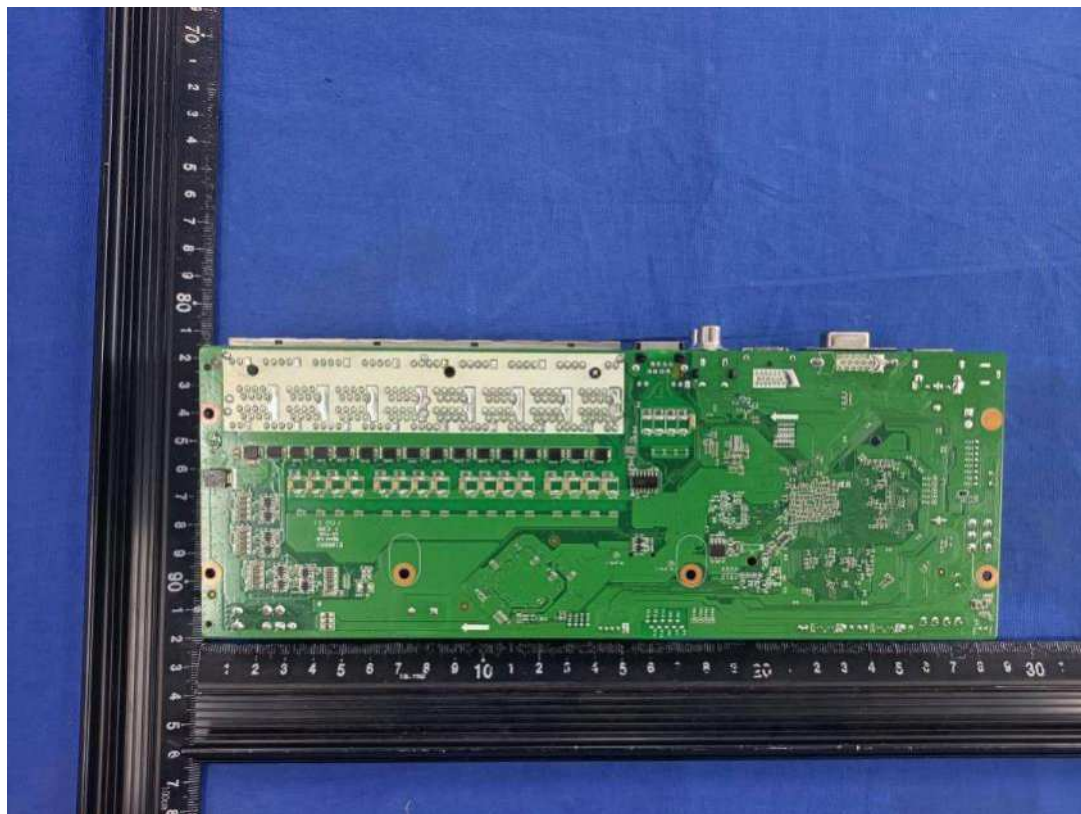
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Picture 13 – Main board view (Model: DS-80517)



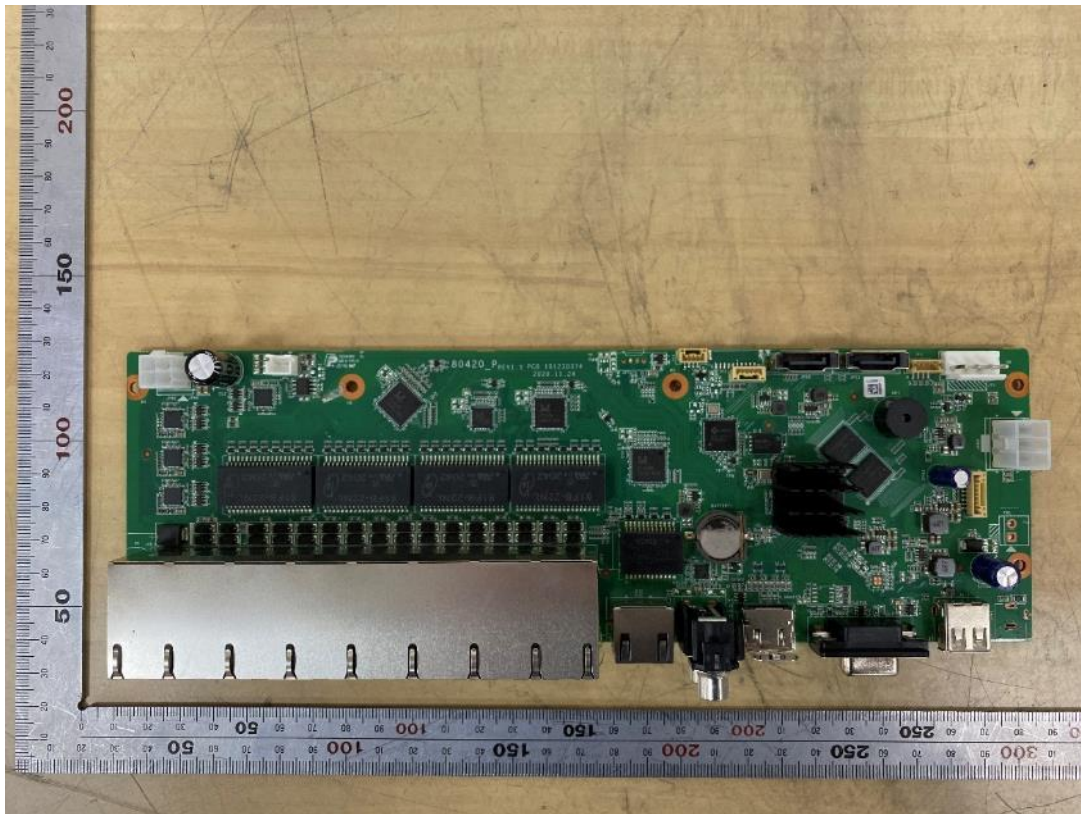
Picture 14 – Main board view (Model: DS-80517)



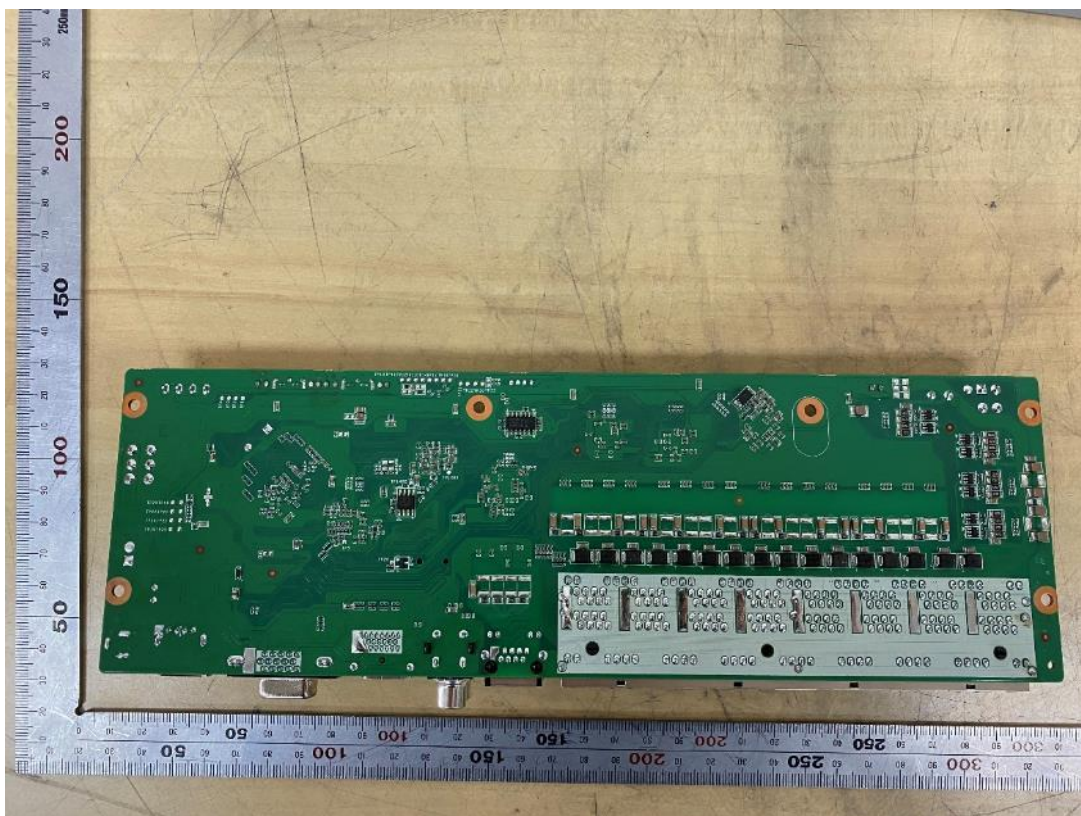
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Picture 15 – Main board view (Model: DS-80420)

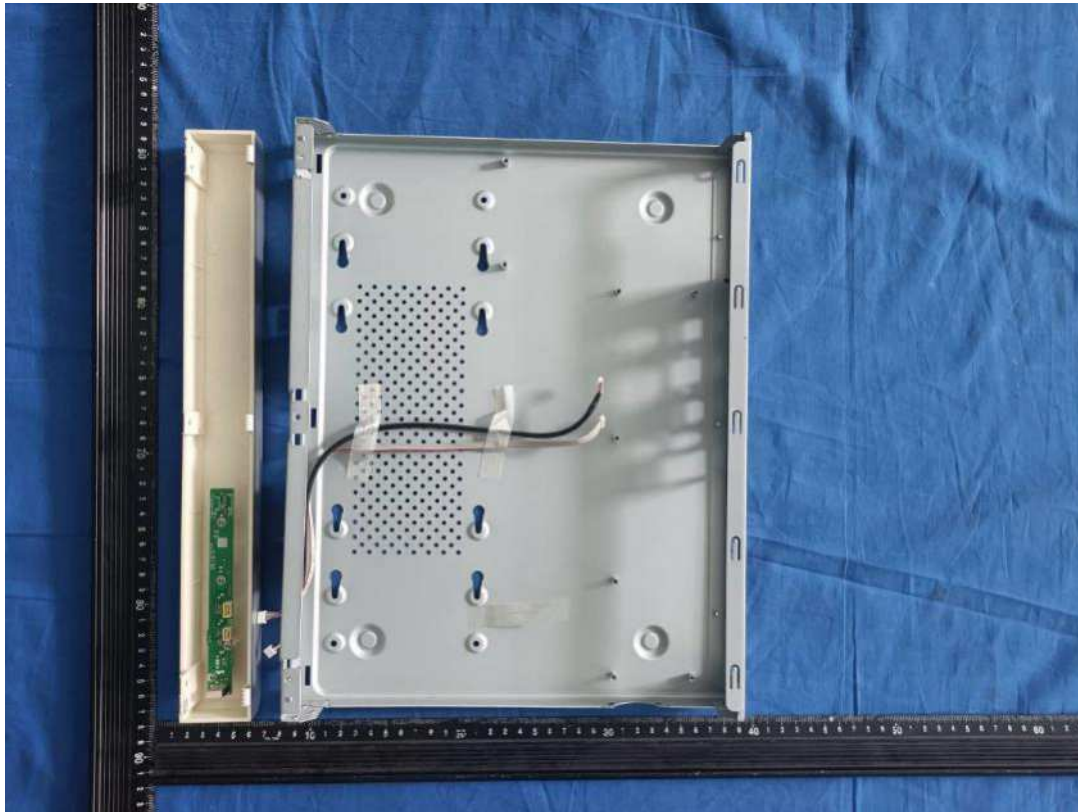


Picture 16 – Main board view (Model: DS-80420)

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Picture 17 – Internal view



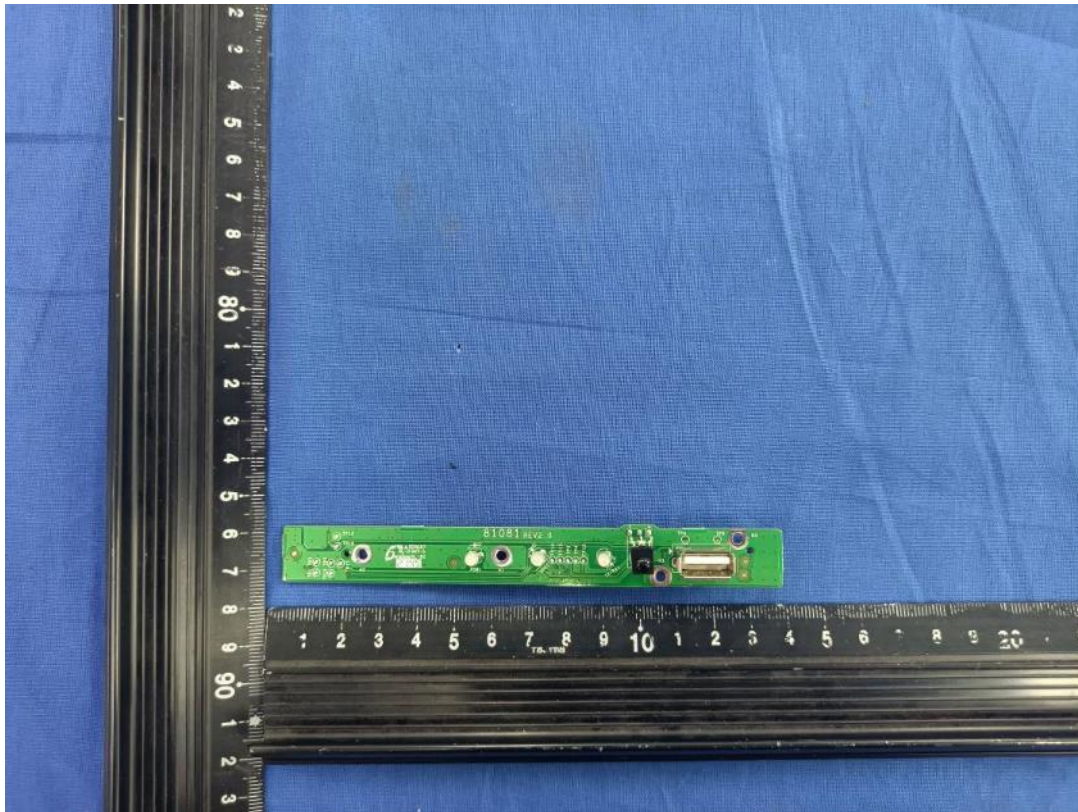
Picture 18 – Internal view



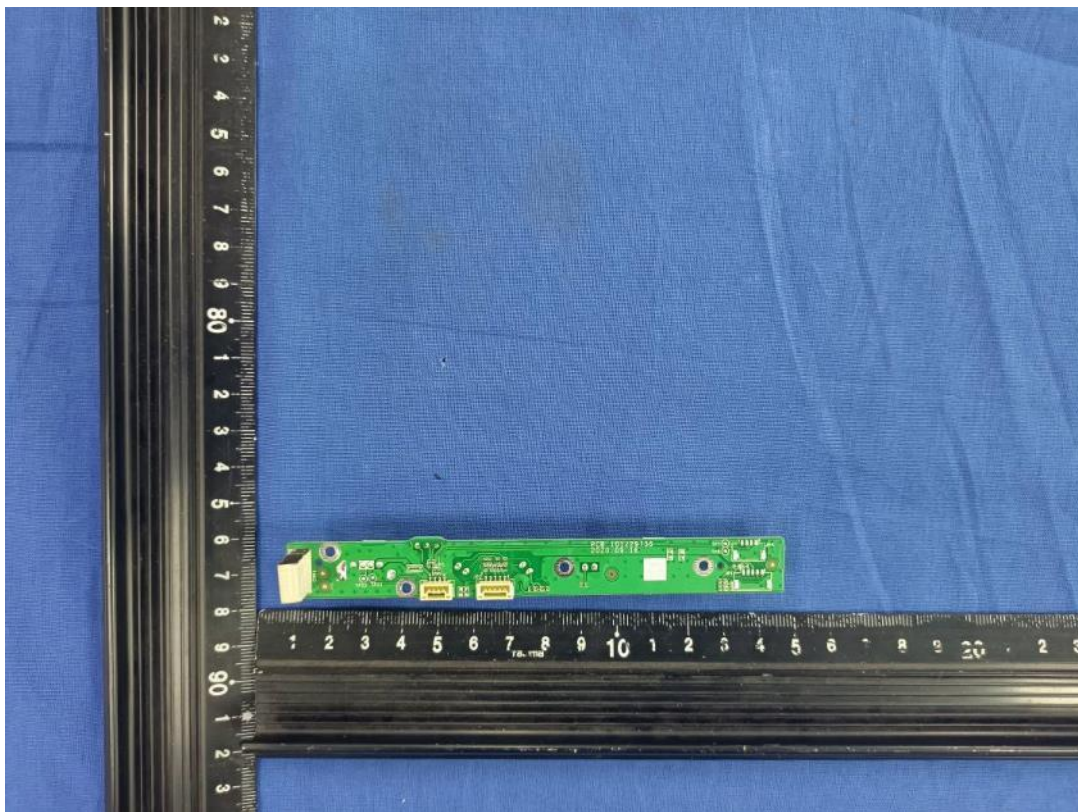
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Picture 19 – PCB for front panel



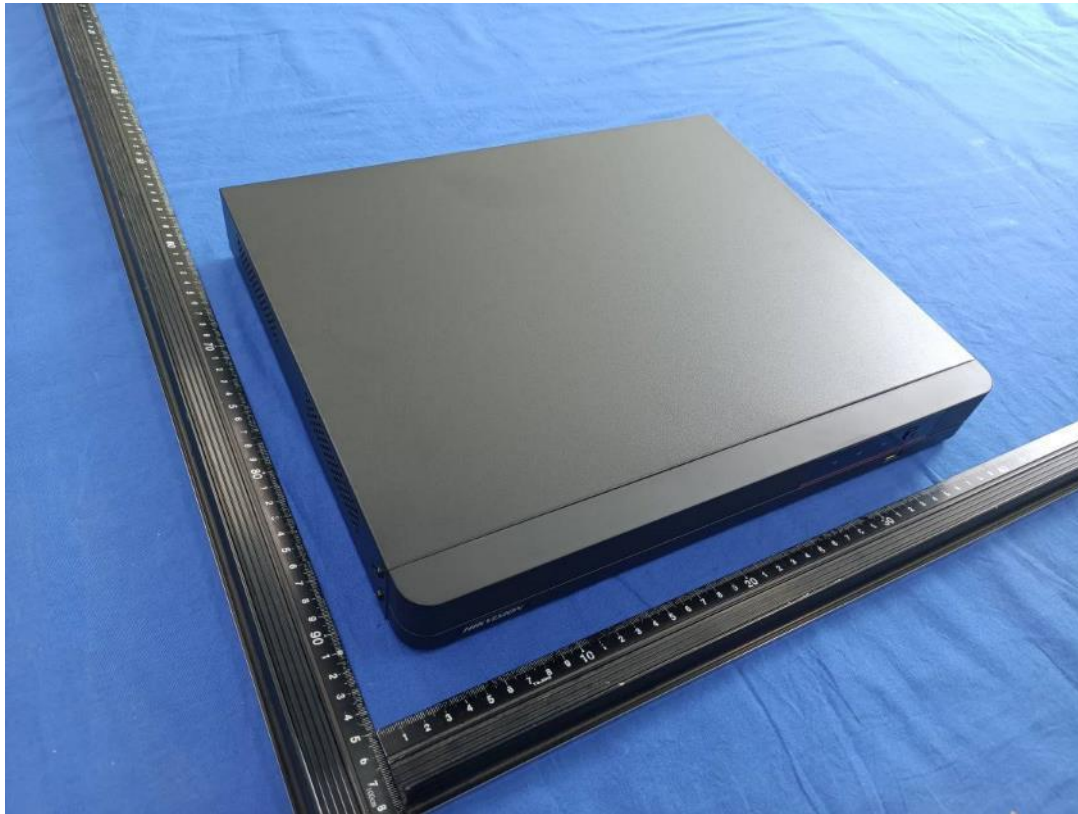
Picture 20 – PCB for front panel



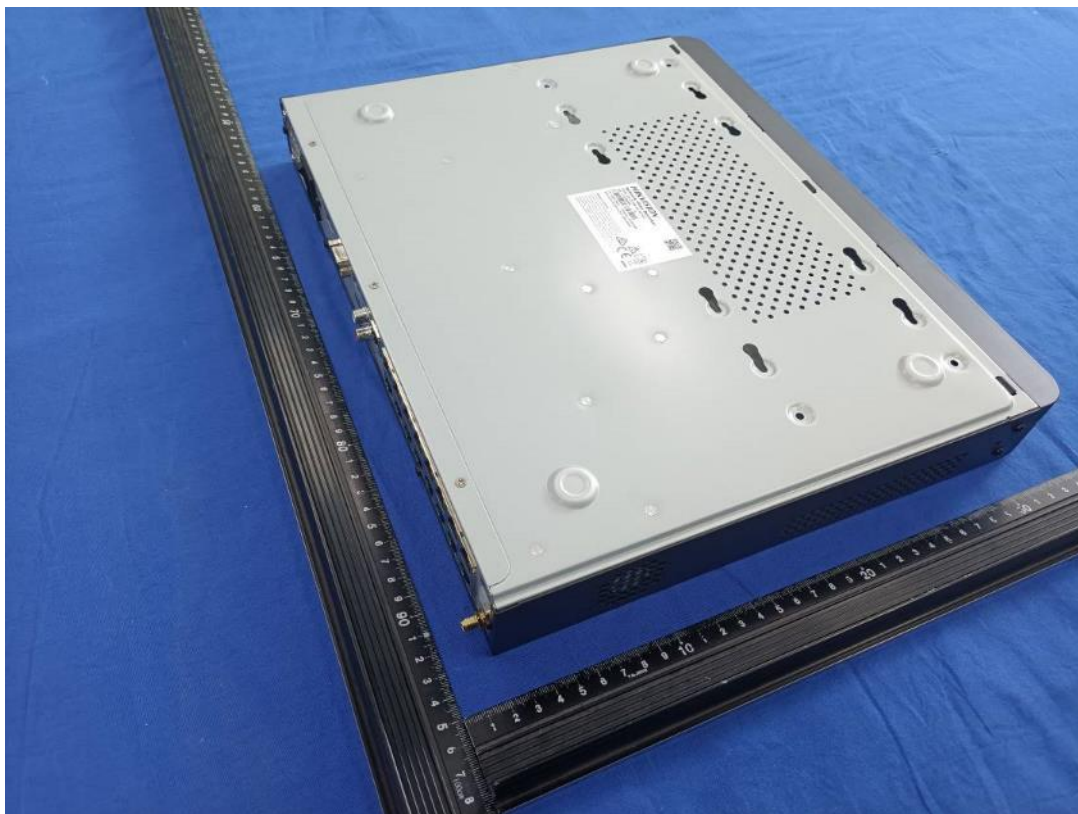
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Picture 21 – Overall view (Front plastic cover appearance 3)



Picture 22 – Overall view

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Picture 23 – internal view



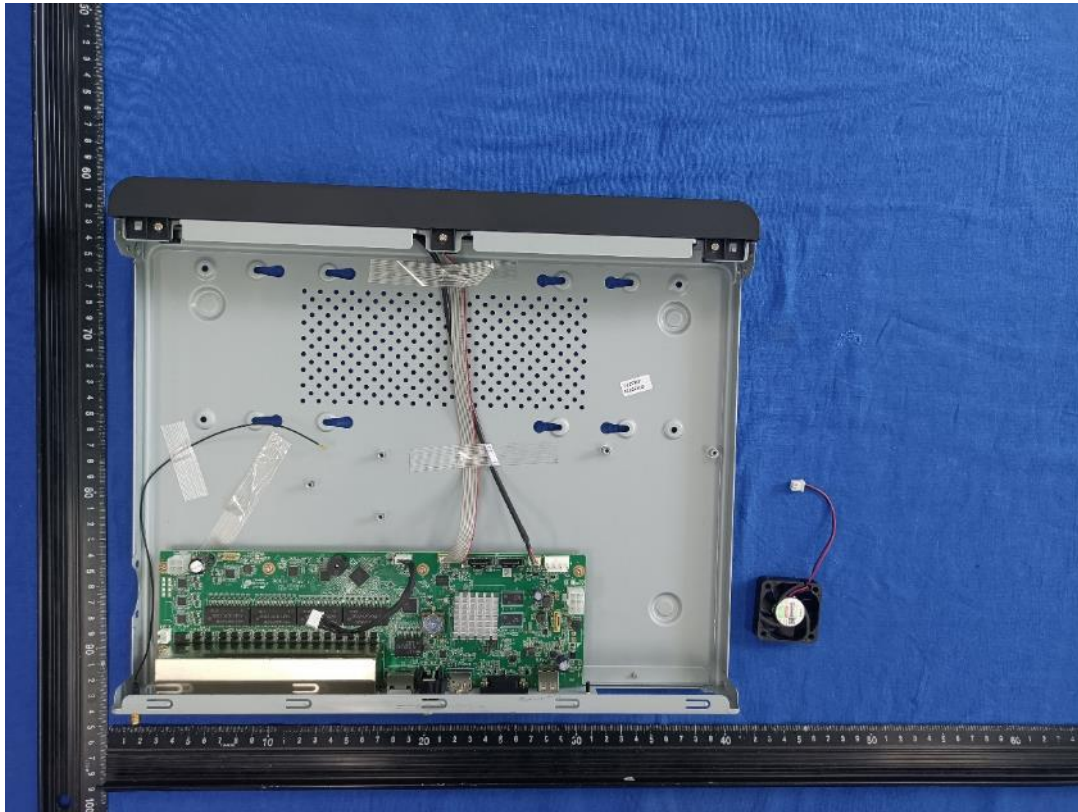
Picture 24 – internal view (include mainboard model: DS-80531)



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Picture 25 – internal view

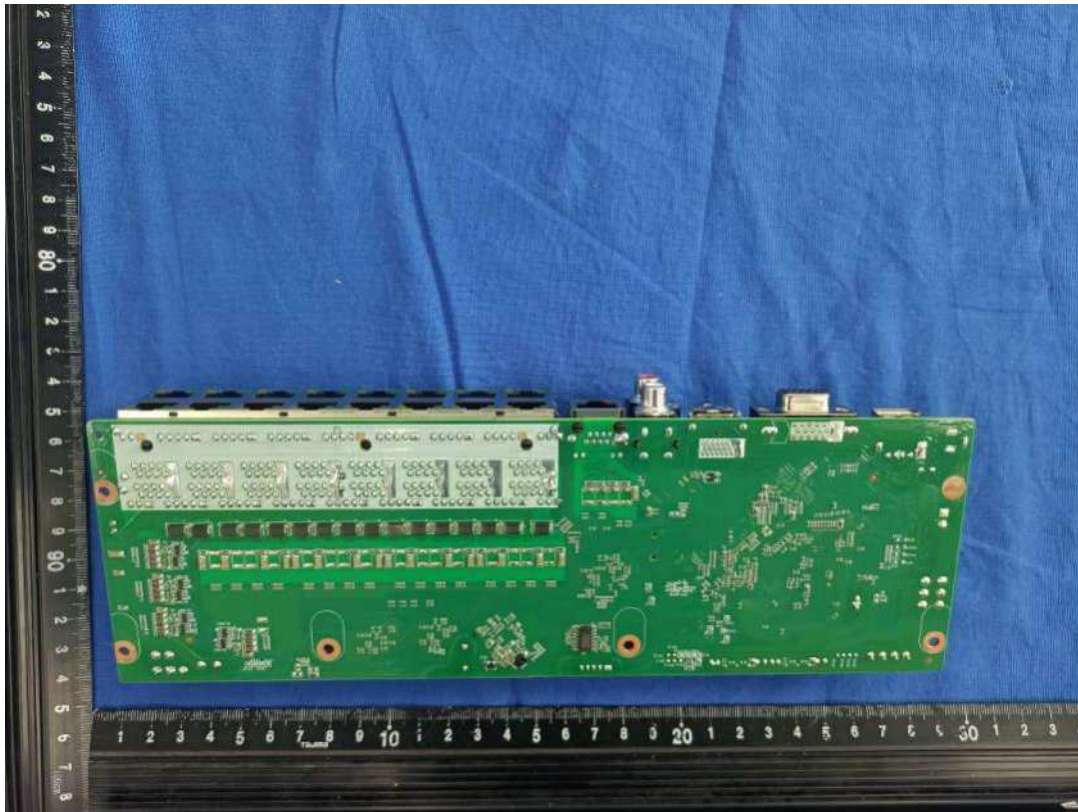


Picture 26 – PCB view (mainboard model: DS-80531)

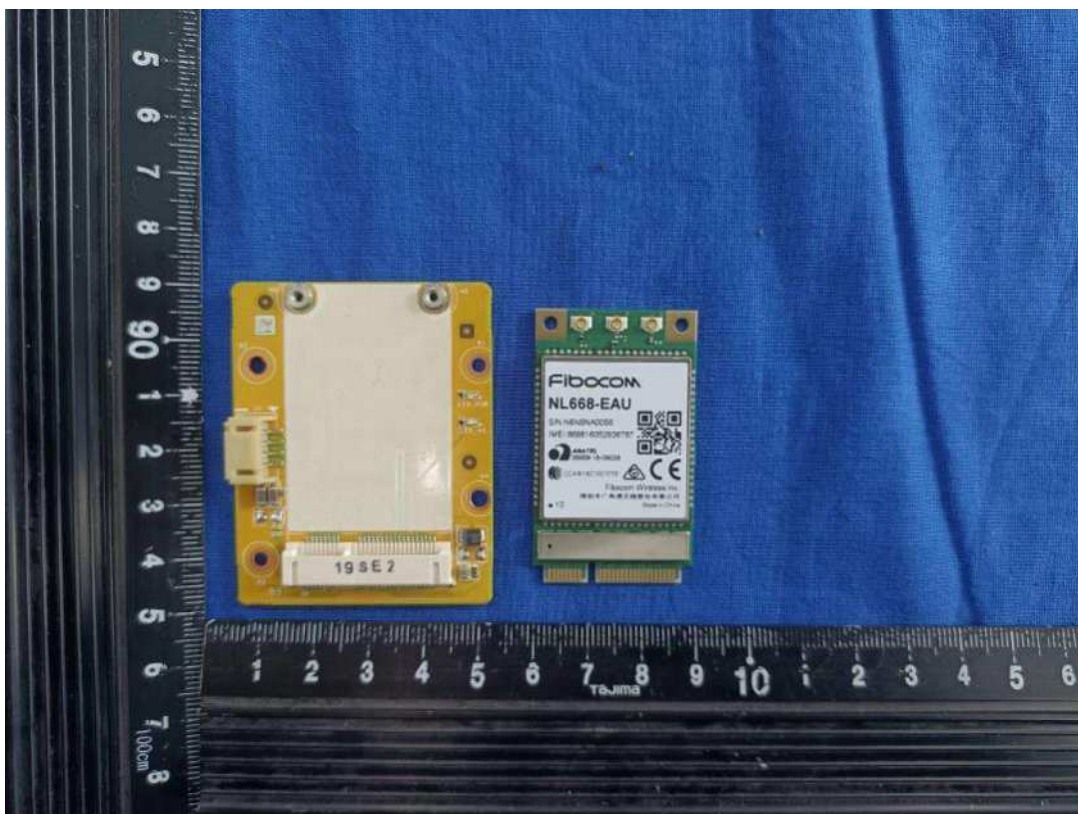
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Picture 27 – PCB view (mainboard model: DS-80531)



Picture 28 – Wireless module PCB view



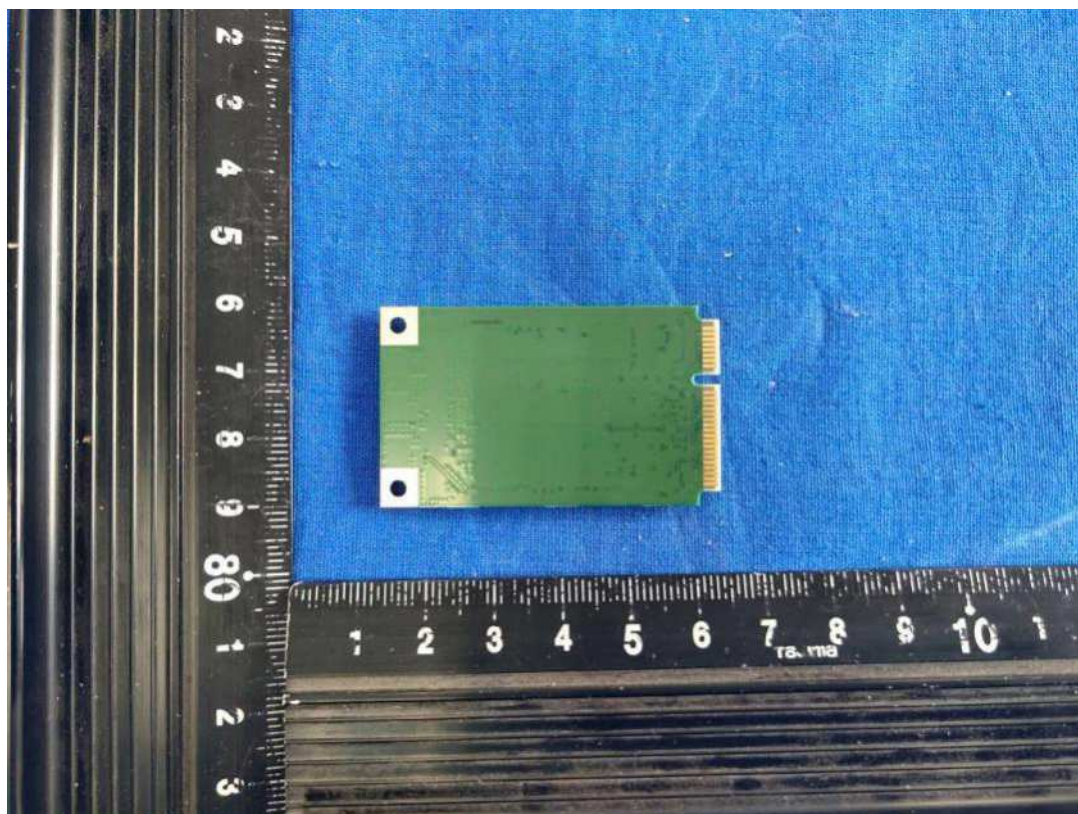
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Picture 29 – Wireless module PCB view



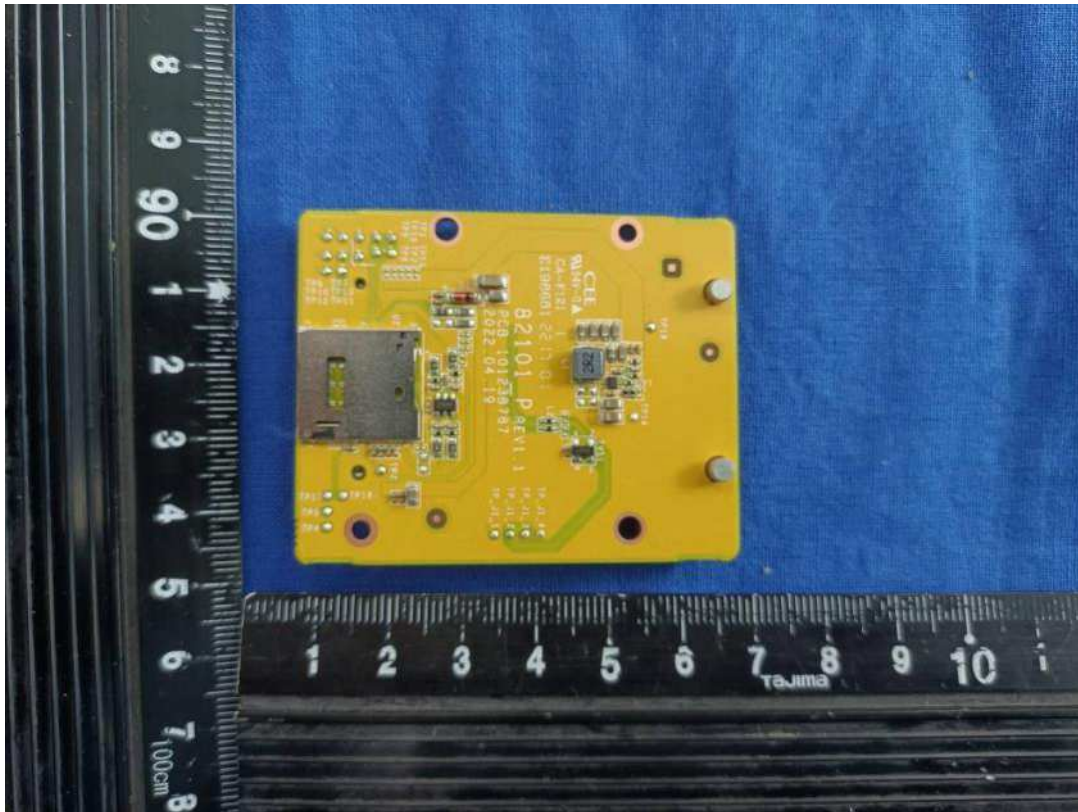
Picture 30 – Wireless module PCB view



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Picture 31 – Wireless module PCB view

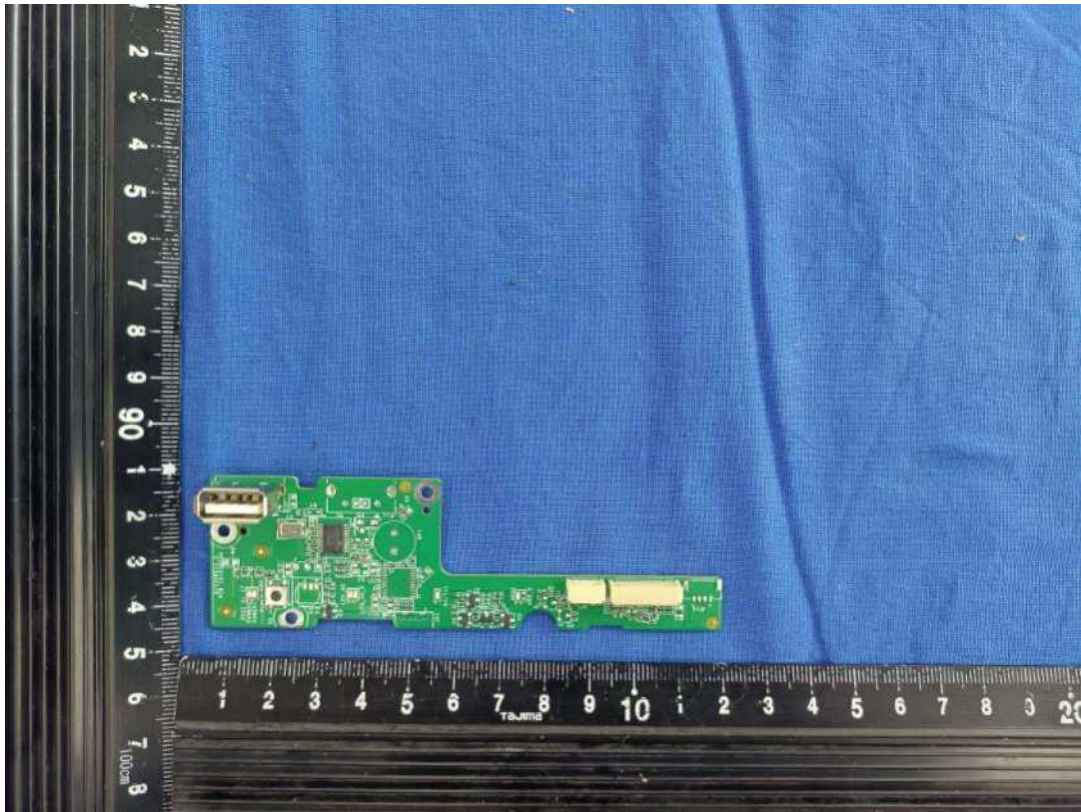


Picture 32 – Front plastic cover internal view

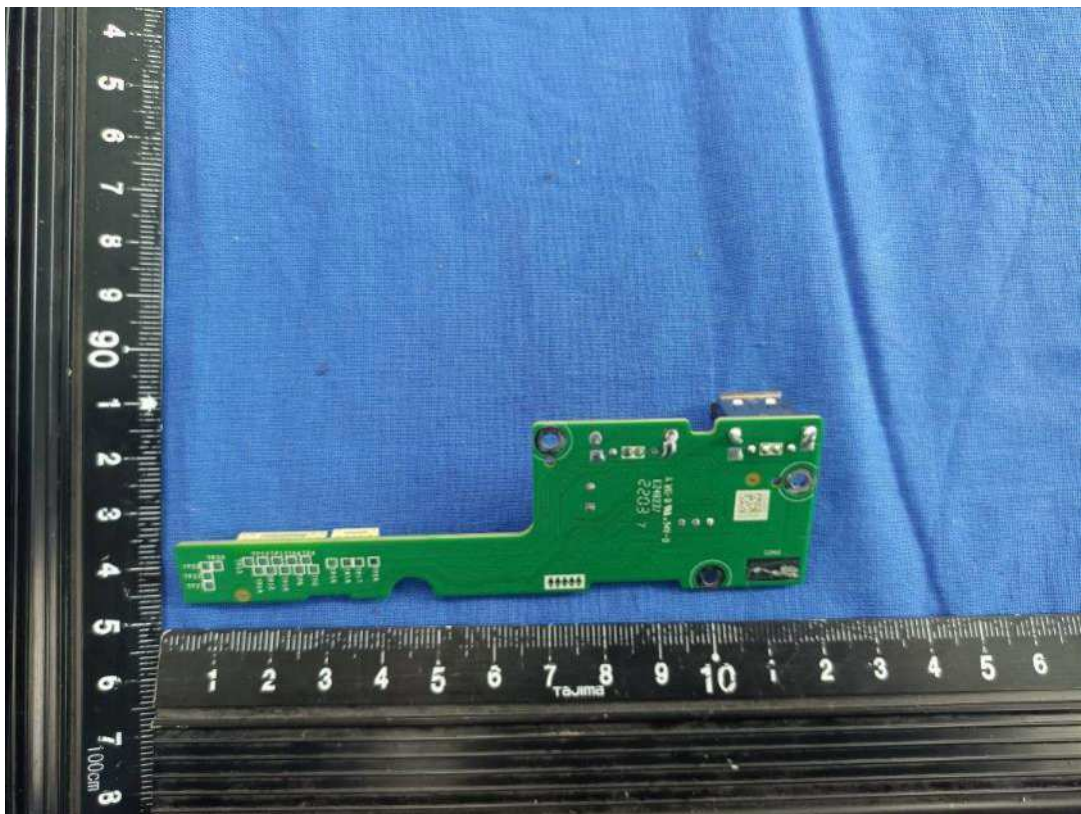
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Picture 33 – PCB view (Front plastic cover)



Picture 34 – PCB view (Front plastic cover)



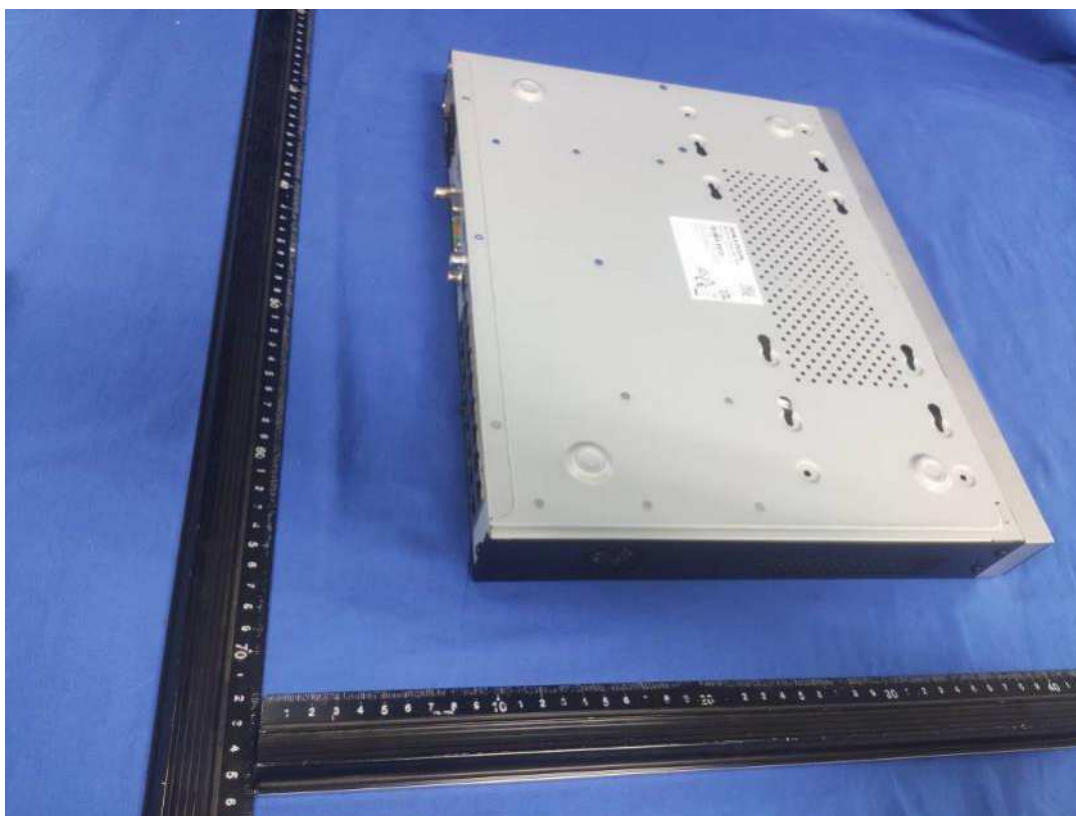
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Picture 35 – Overall view (Front plastic cover appearance 4)



Picture 36 – Overall view



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Picture 37 – internal view



Picture 38 – internal view (include mainboard model: DS-80500)

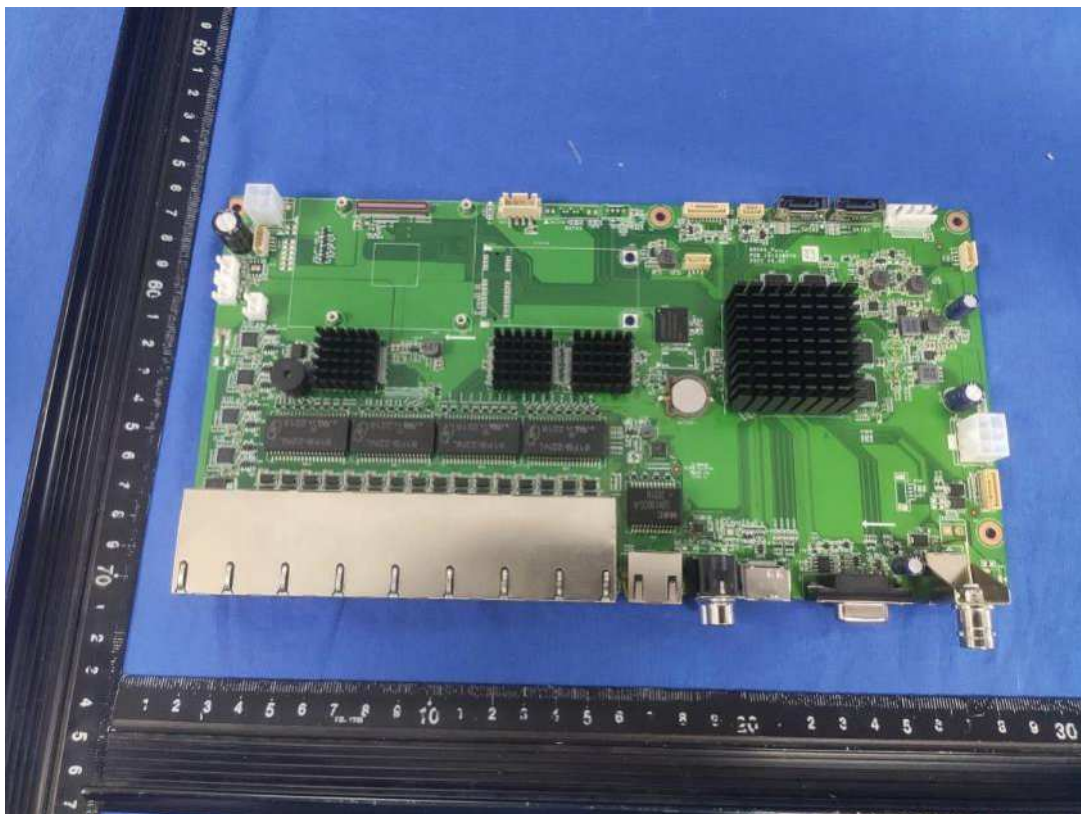
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Picture 39 – internal view



Picture 40 – PCB view (mainboard model: DS-80500)



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Picture 41 – PCB view (mainboard model: DS-80500)

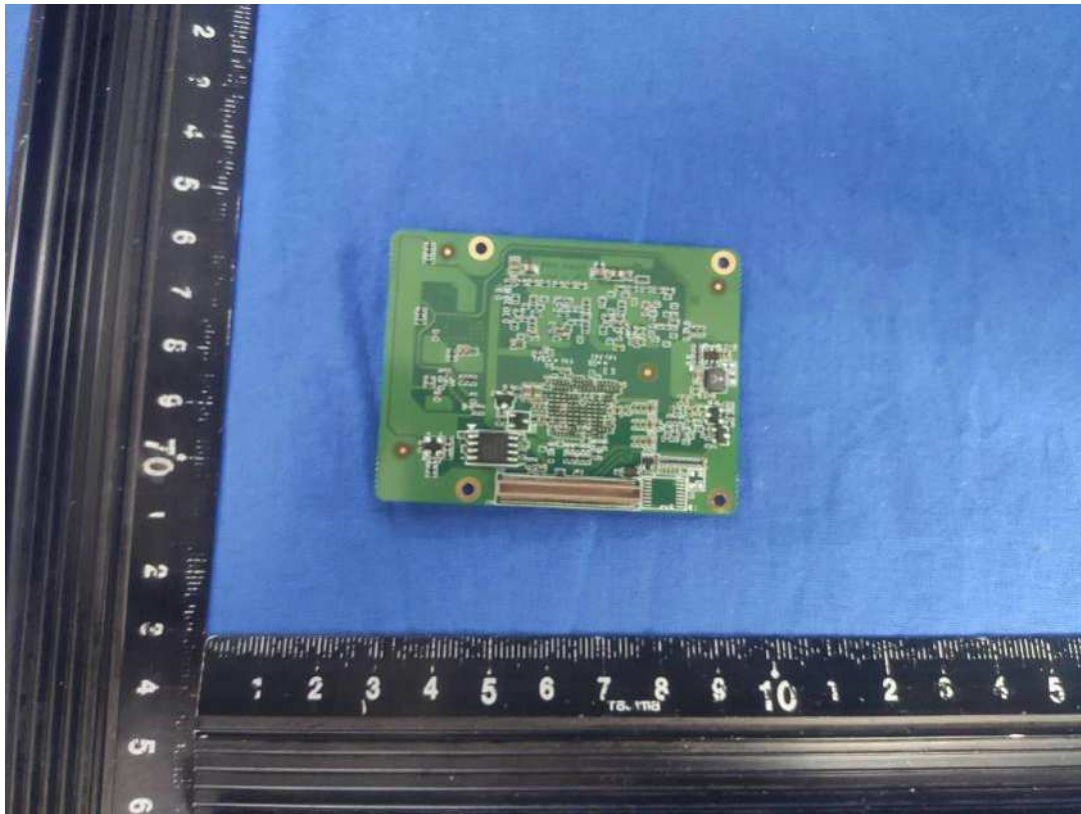


Picture 42 – Attached PCB view

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Picture 43 – Attached PCB view



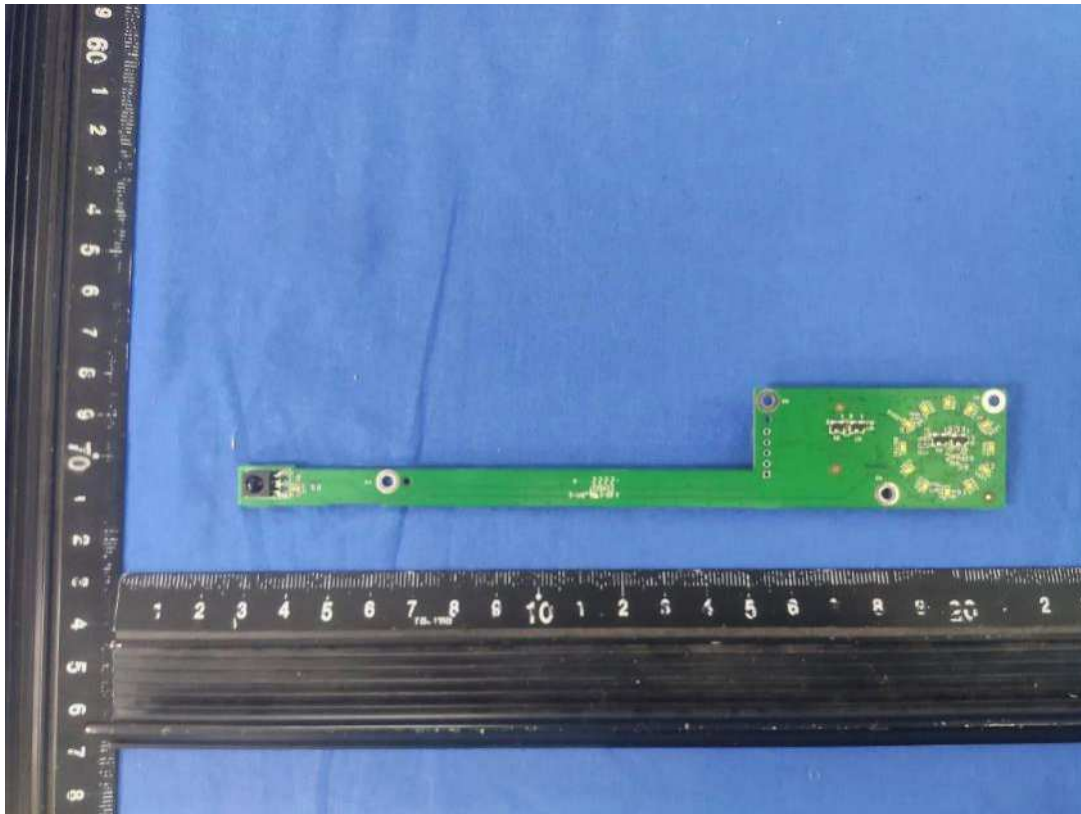
Picture 44 – Front plastic cover internal view



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Picture 45 – PCB view (Front plastic cover)

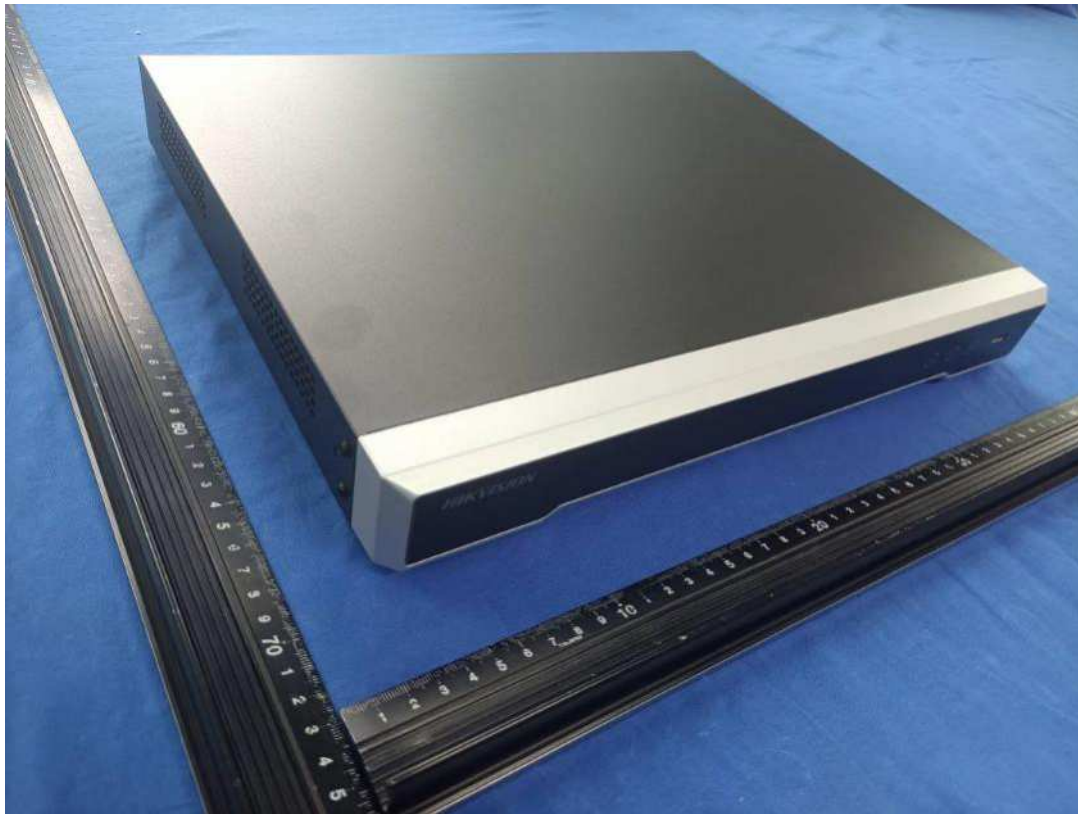


Picture 46 – PCB view (Front plastic cover)

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Picture 47 – Overall view (Front plastic cover appearance 5)



Picture 48 – Overall view



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Picture 49 – internal view



Picture 50 – internal view (include mainboard model: DS-80545)

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Picture 51 – internal view



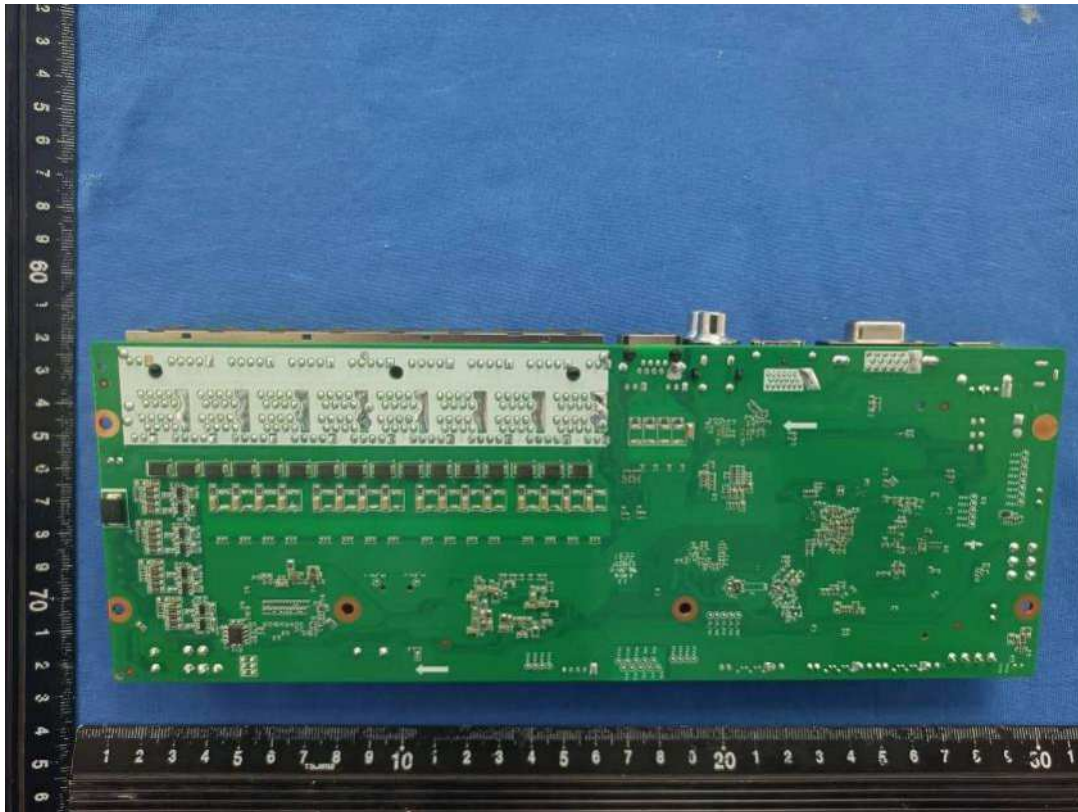
Picture 52 – PCB view (mainboard model: DS-80545)



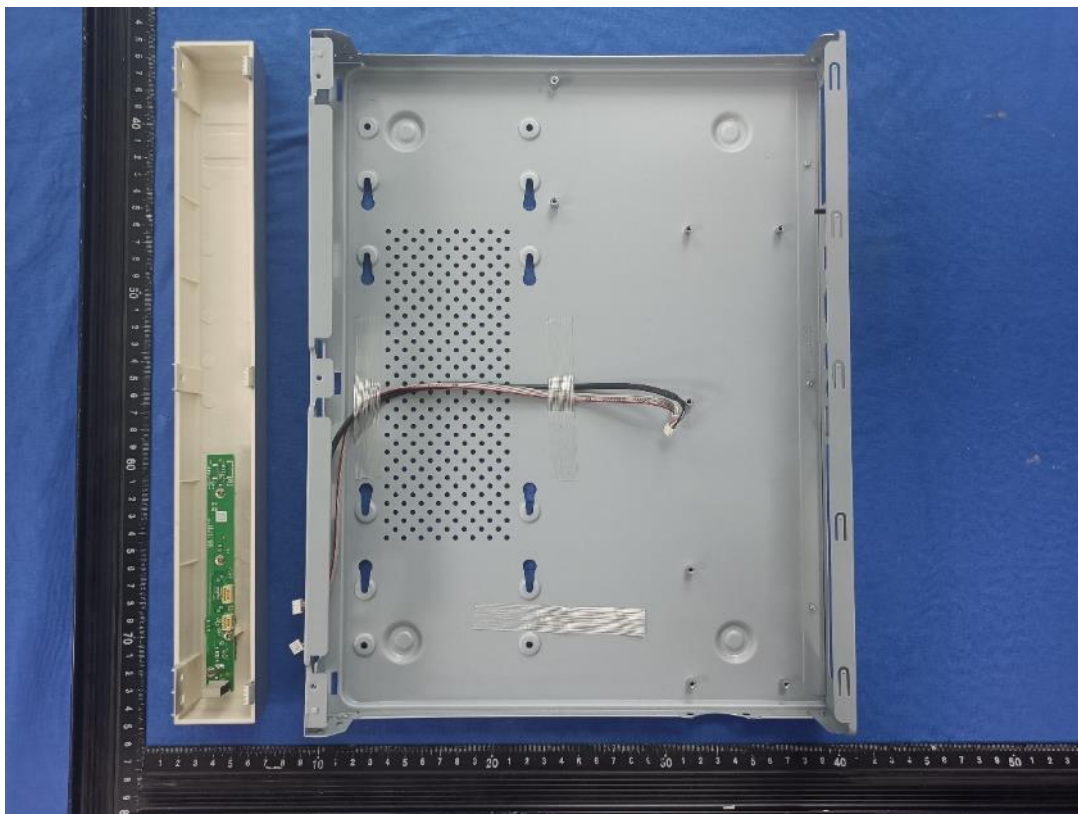
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Picture 53 – PCB view (mainboard model: DS-80545)

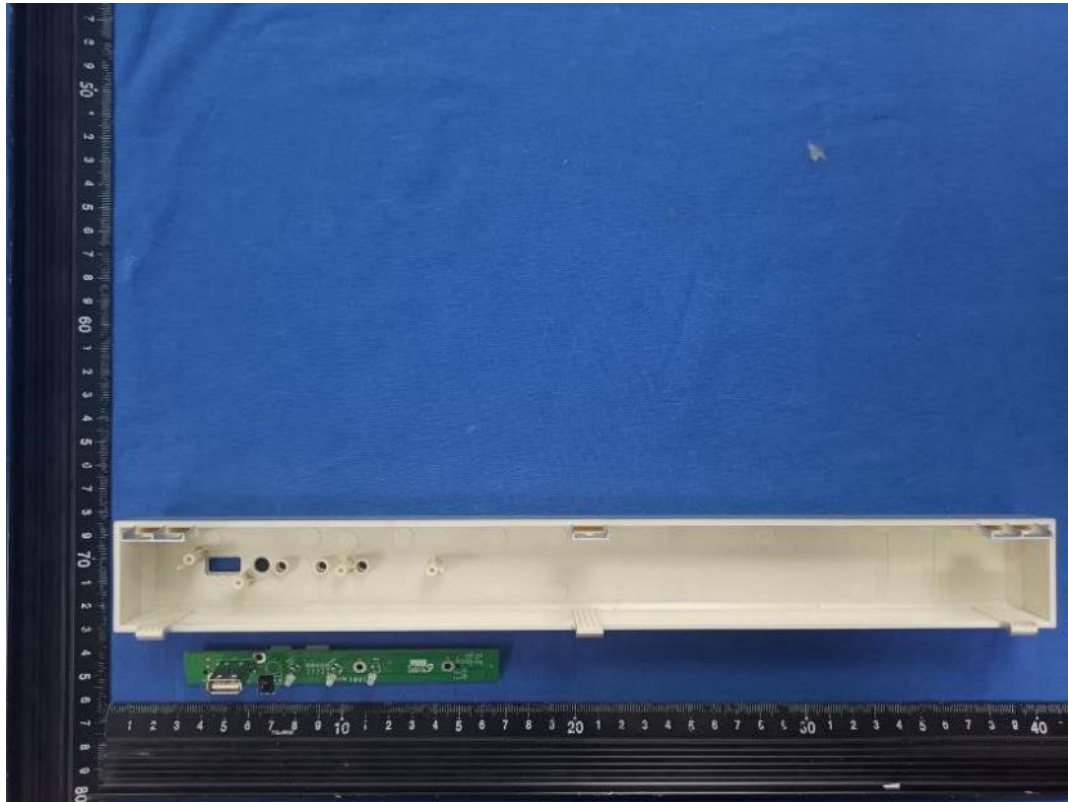


Picture 54 – Front plastic cover internal view

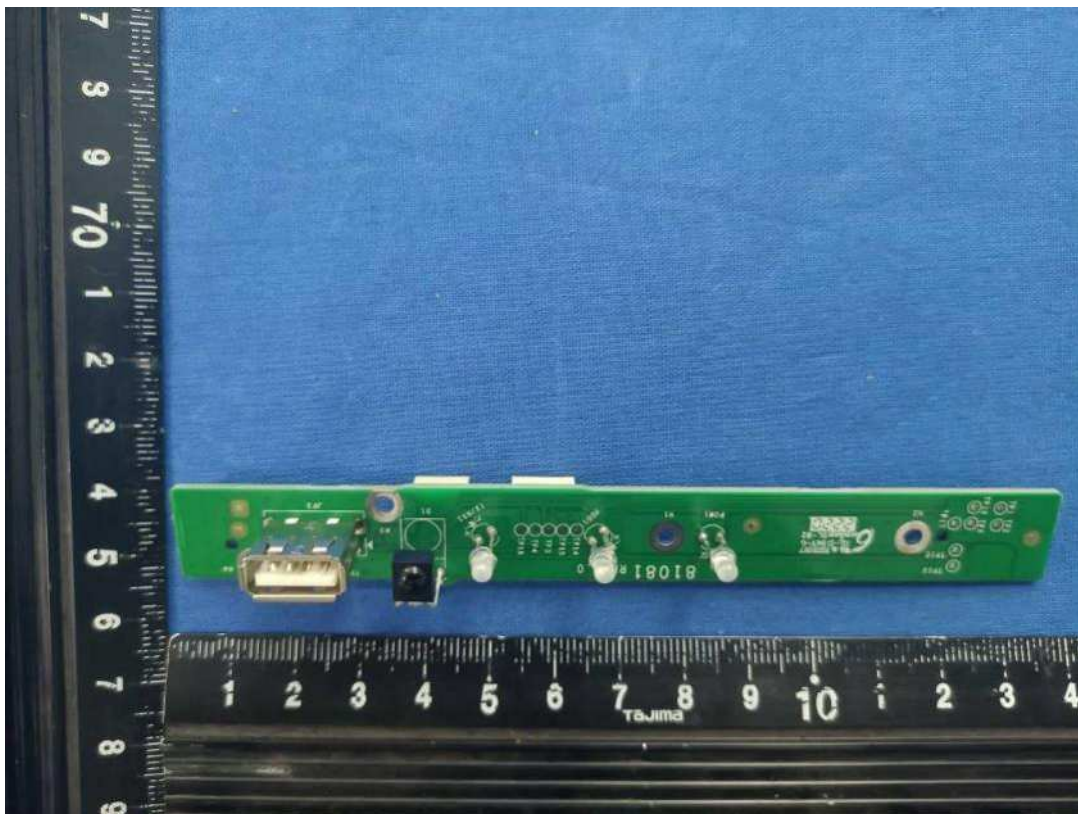
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Picture 55 – Front plastic cover internal view



Picture 56 – PCB view (Front plastic cover)



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Picture 57 – PCB view (Front plastic cover)



Picture 58 – Overall view (Front plastic cover appearance 6)

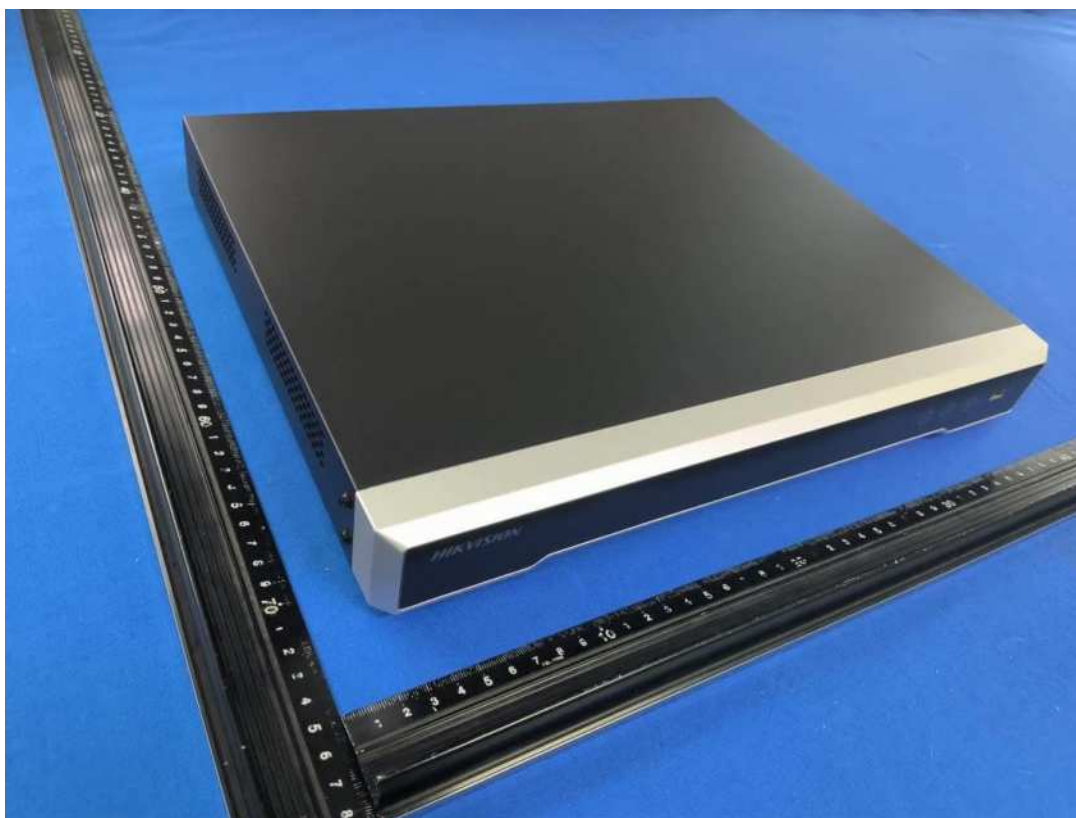
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Picture 59 – Overall view

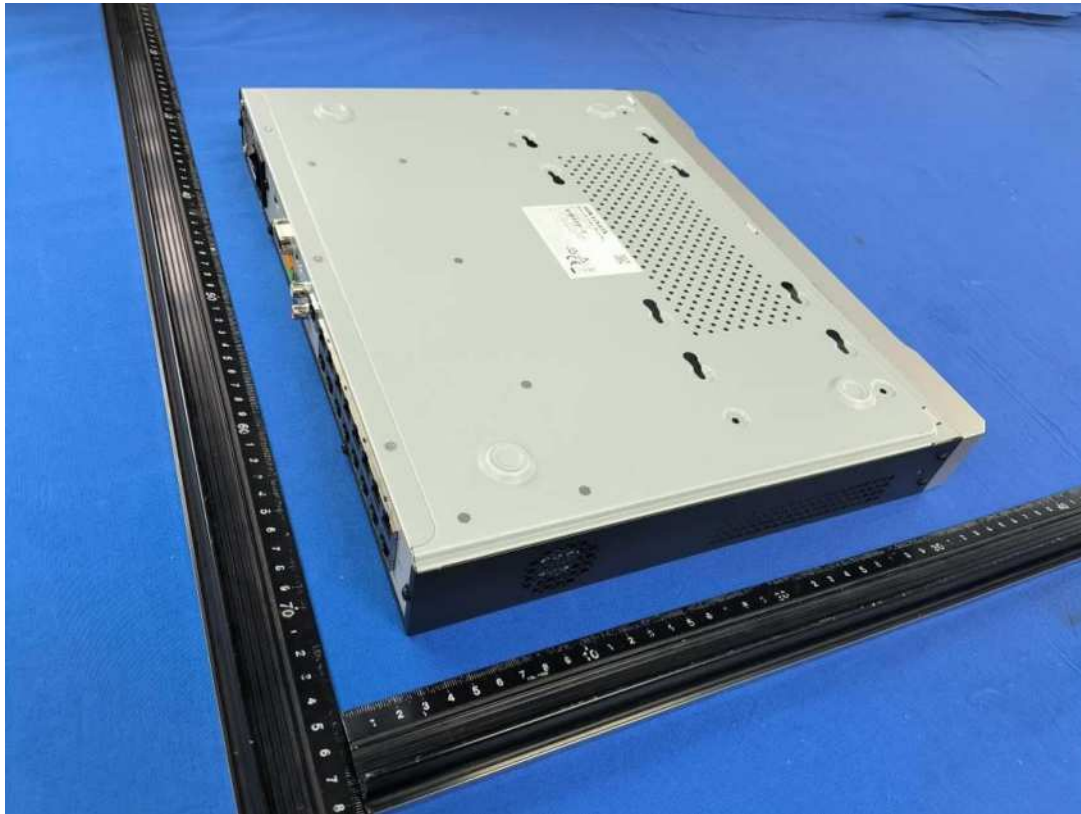


Picture 60 – Overall view

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Picture 61 – Overall view



Picture 62 – internal view



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Picture 63 – internal view

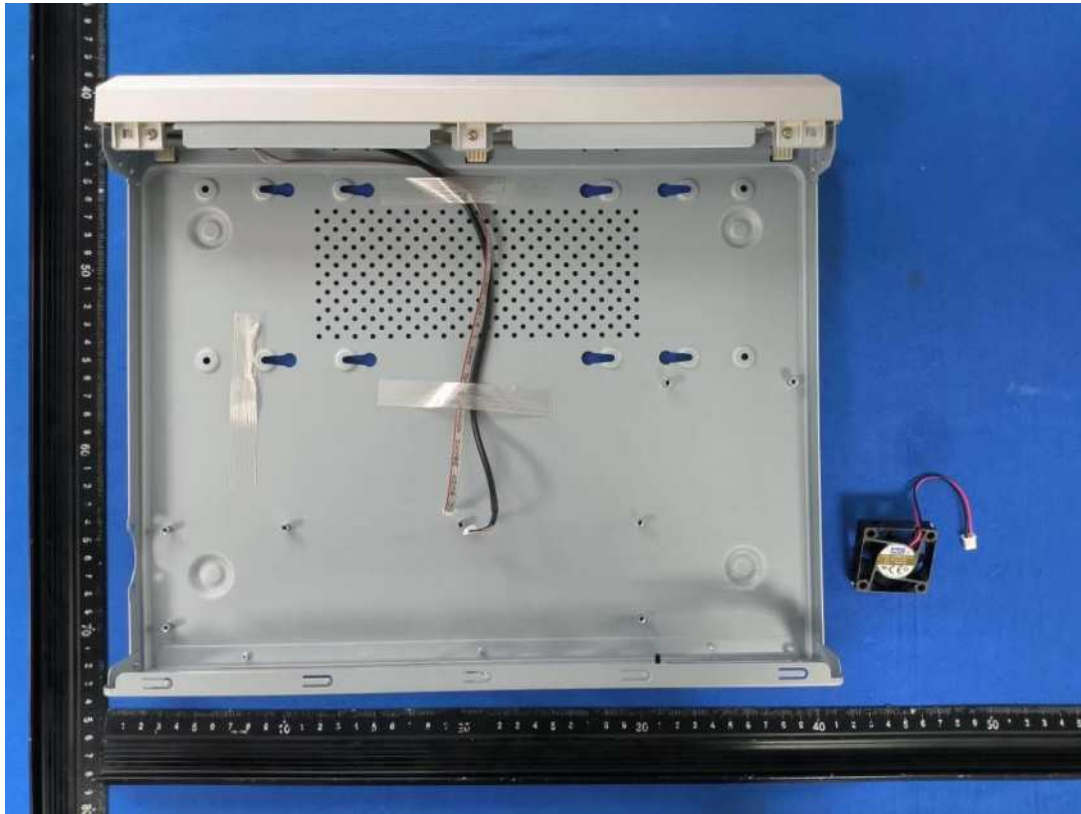


Picture 64 – internal view

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Picture 65 – internal view



Picture 66 – PCB view (mainboard model: DS-80517)



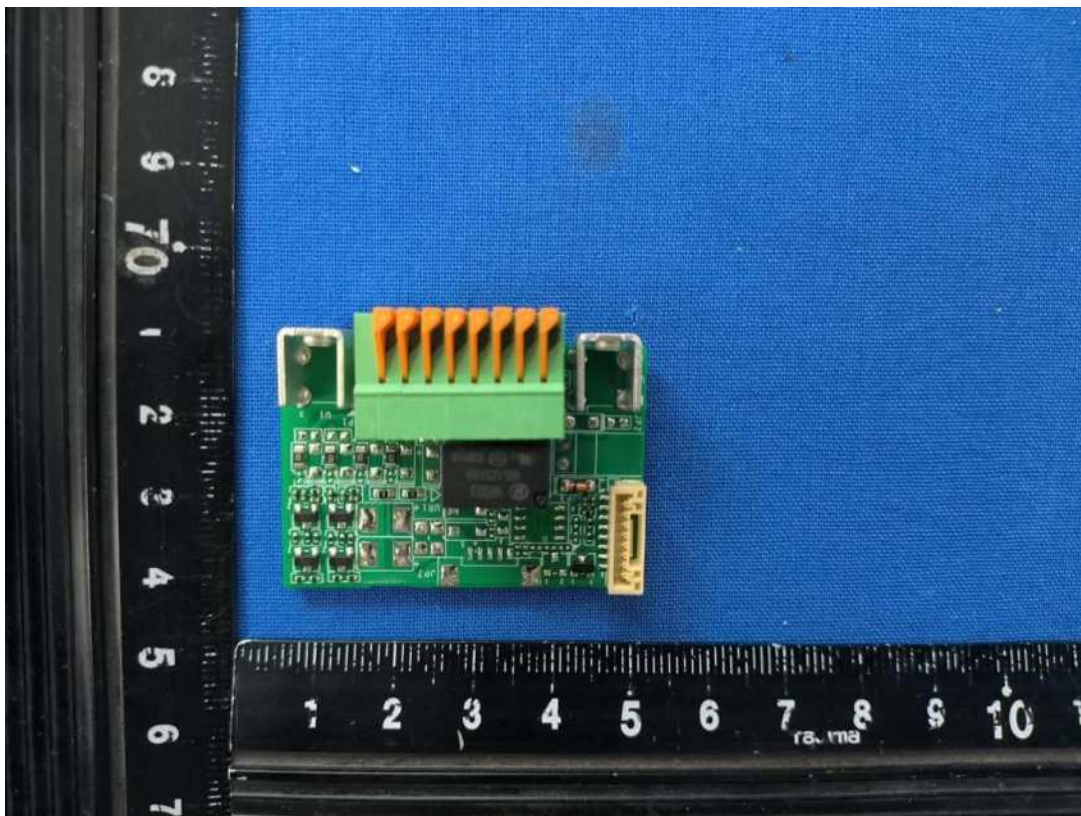
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Picture 67 – PCB view (mainboard model: DS-80517)



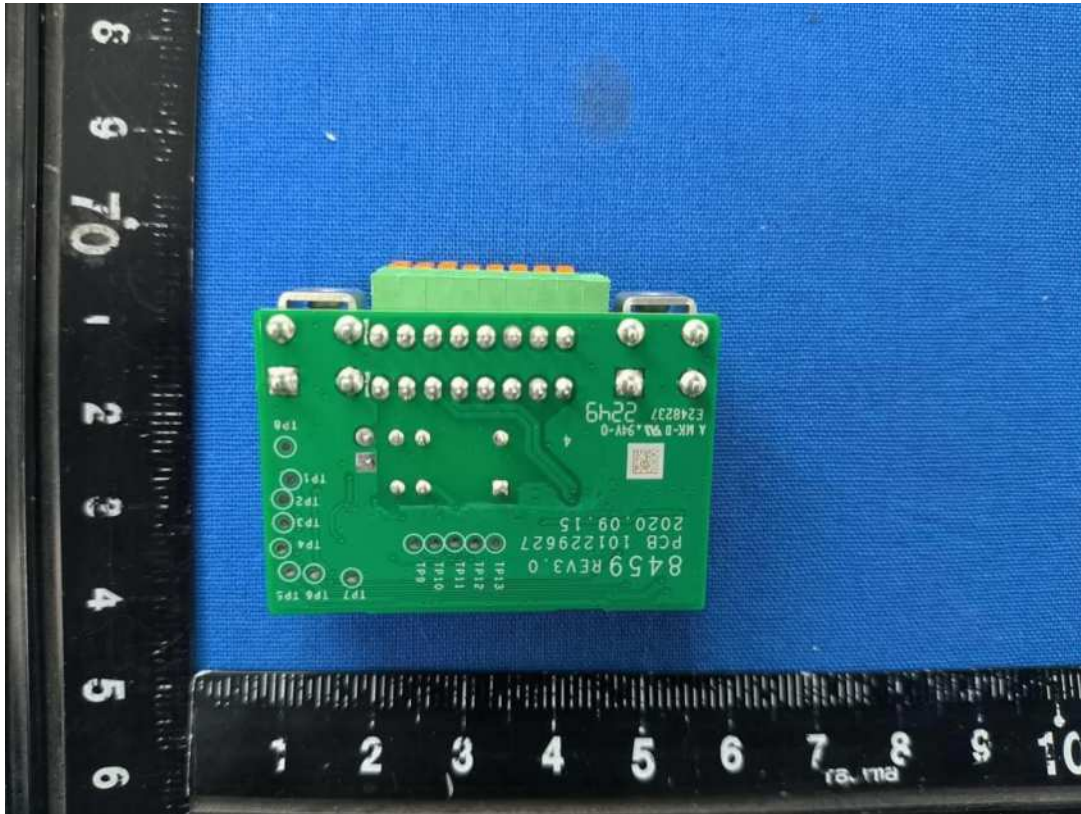
Picture 68 – Attached PCB view



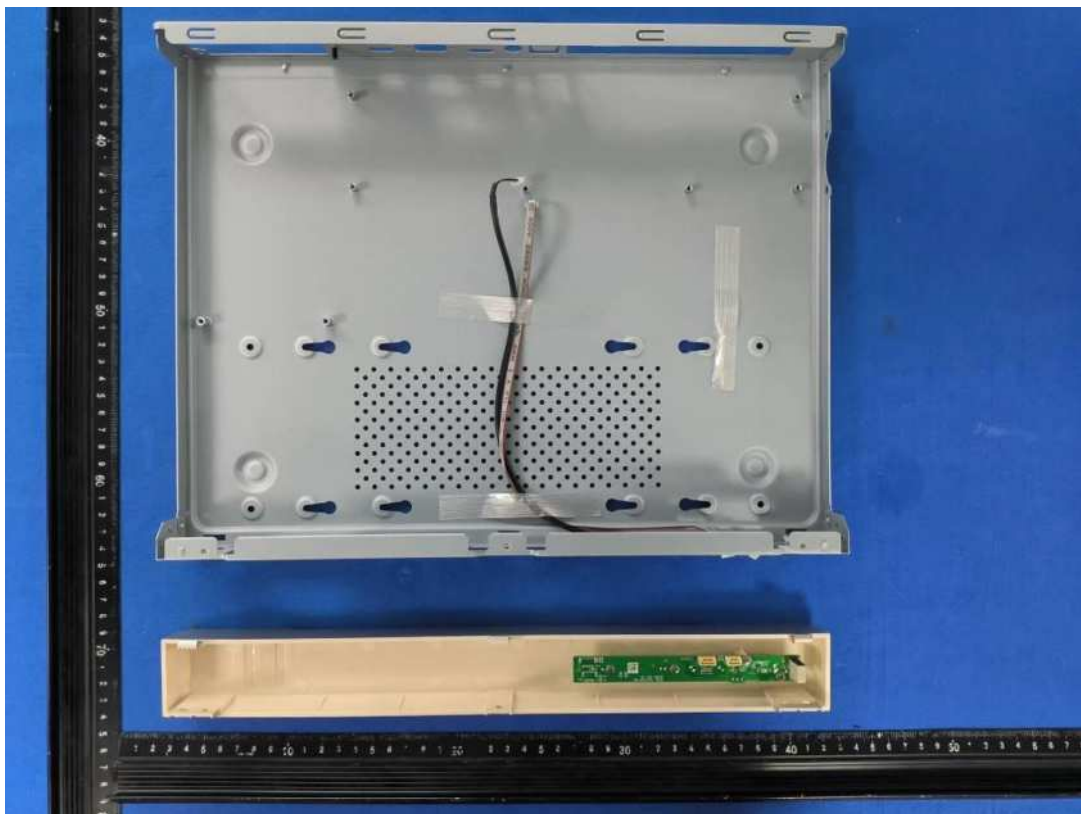
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Picture 69 – Attached PCB view



Picture 70 – PCB view (Front plastic cover)

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Picture 71 – Front plastic cover internal view



Picture 72 – PCB view (Front plastic cover)



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Picture 73 – PCB view (Front plastic cover)



Picture 74 – Overall view (Front plastic cover appearance 7)

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Picture 75 – Overall view



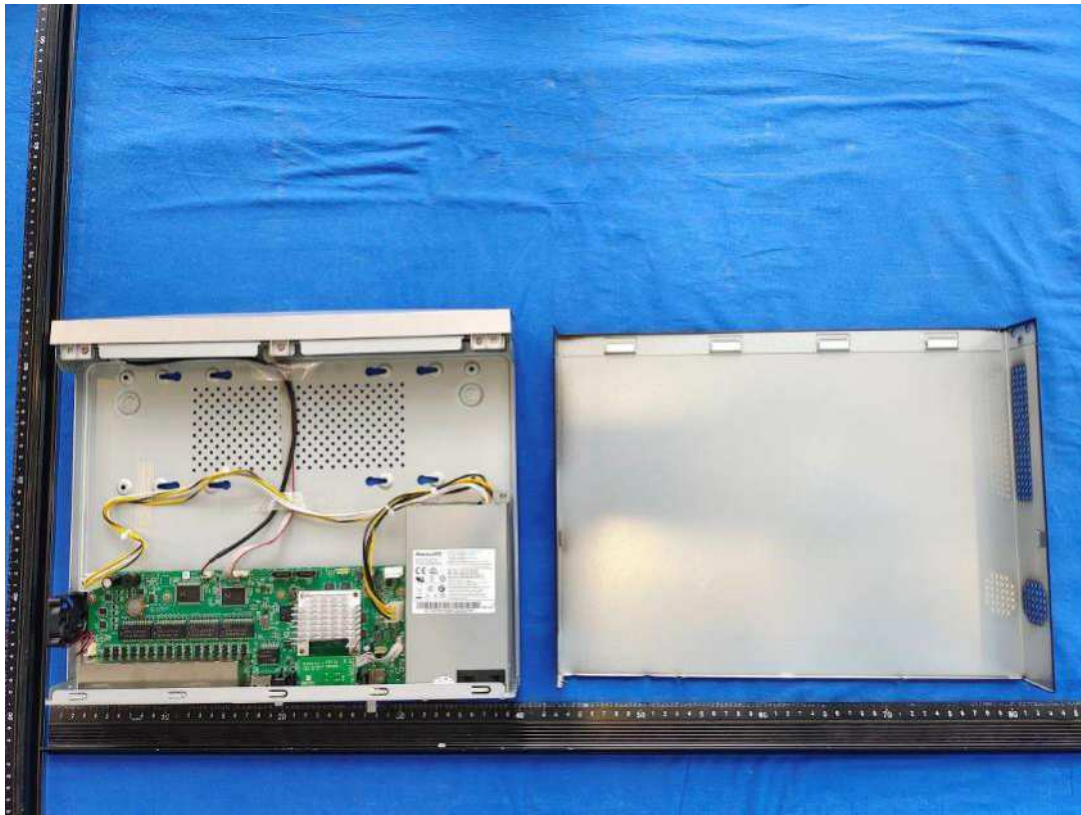
Picture 76 – Overall view



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Picture 77 – Internal view

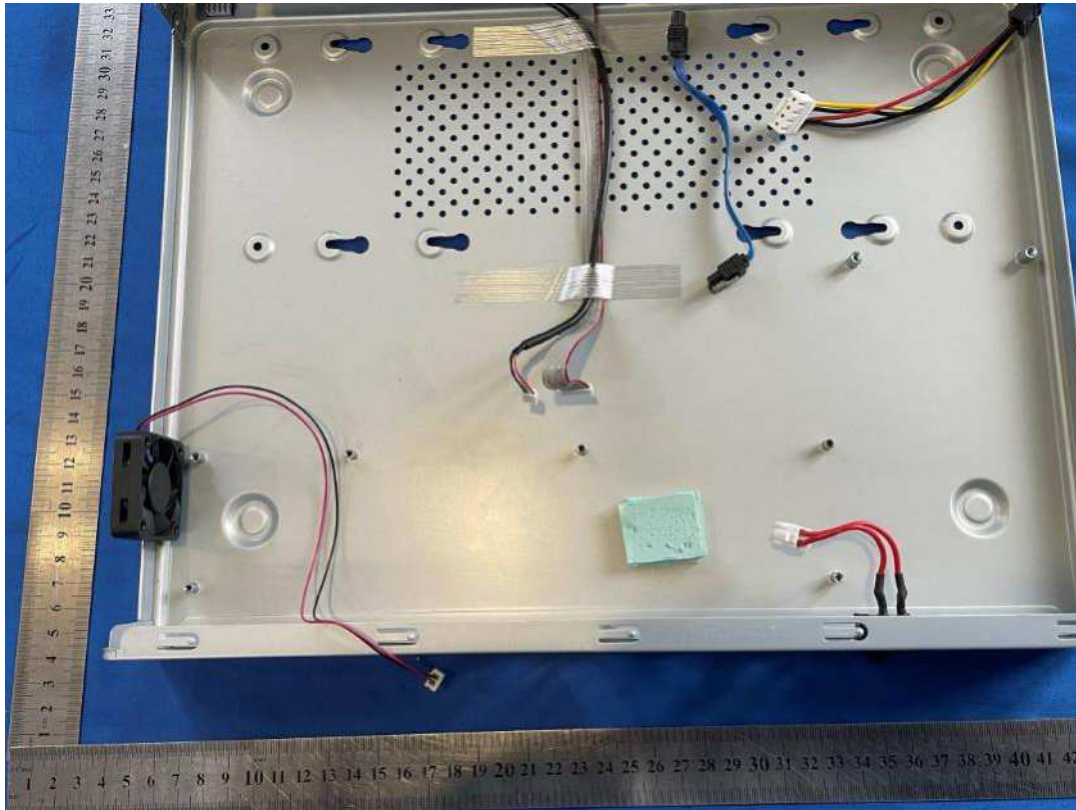


Picture 78 – Internal view

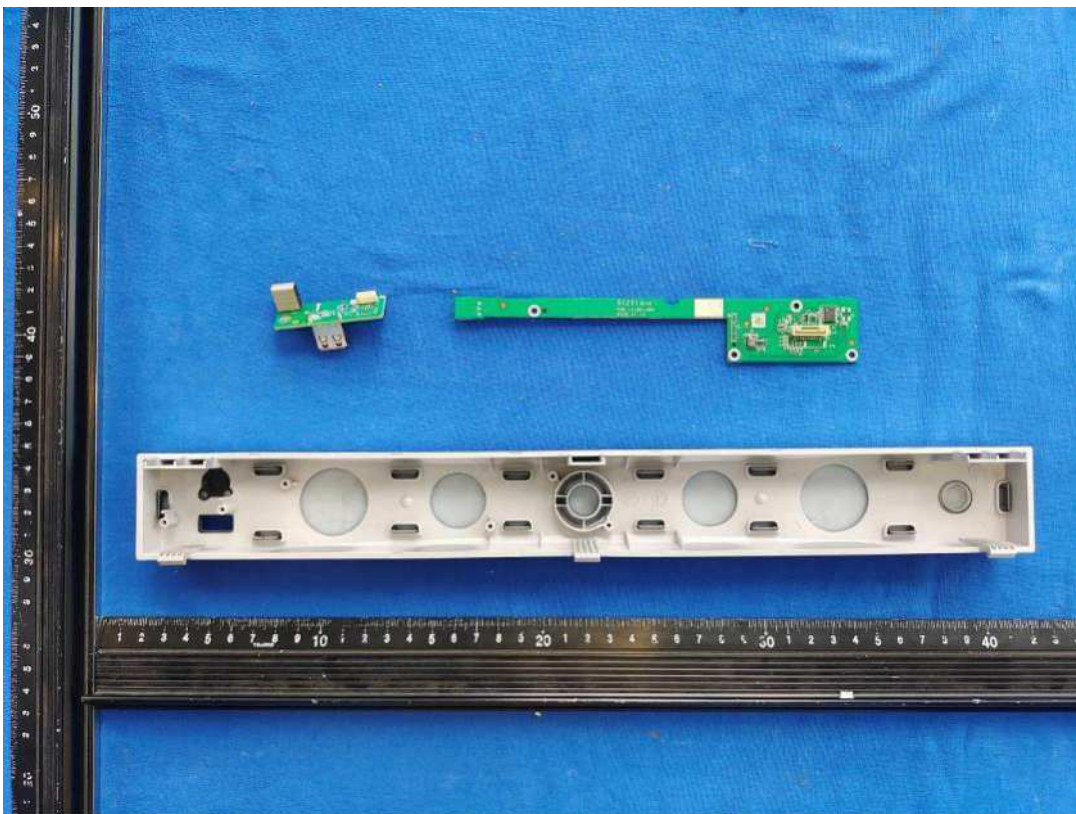
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Picture 79 – Internal view



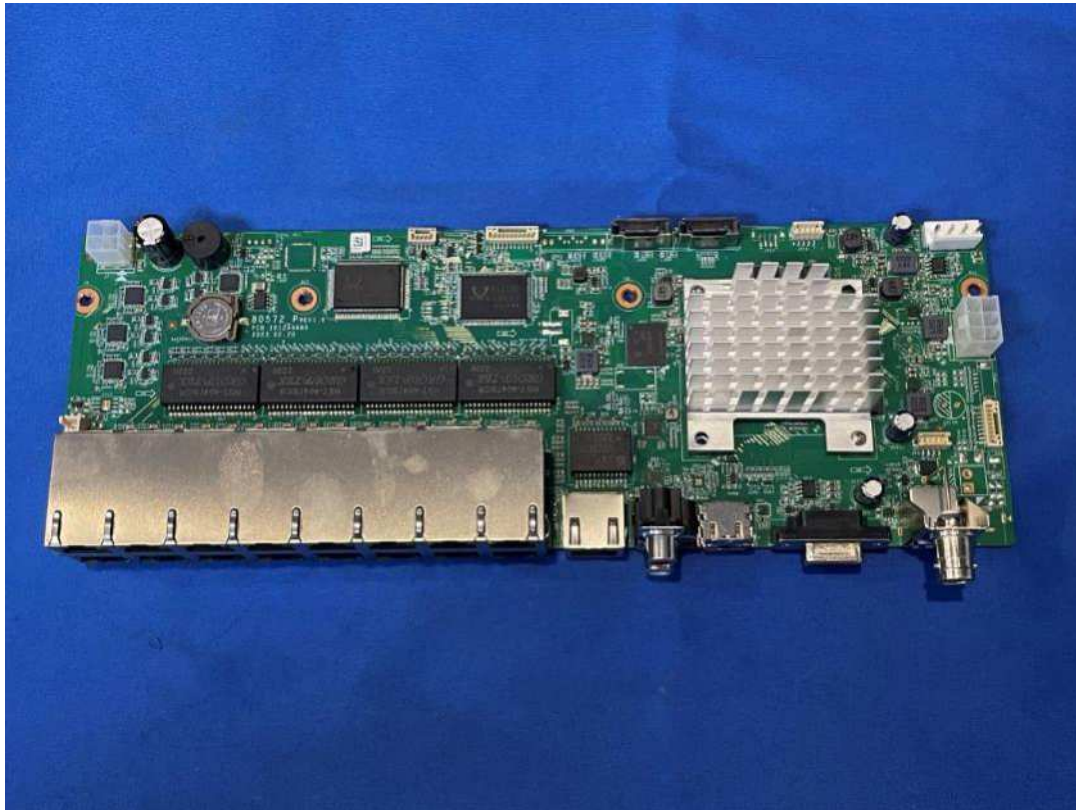
Picture 80 – Add Front plastic cover Internal view



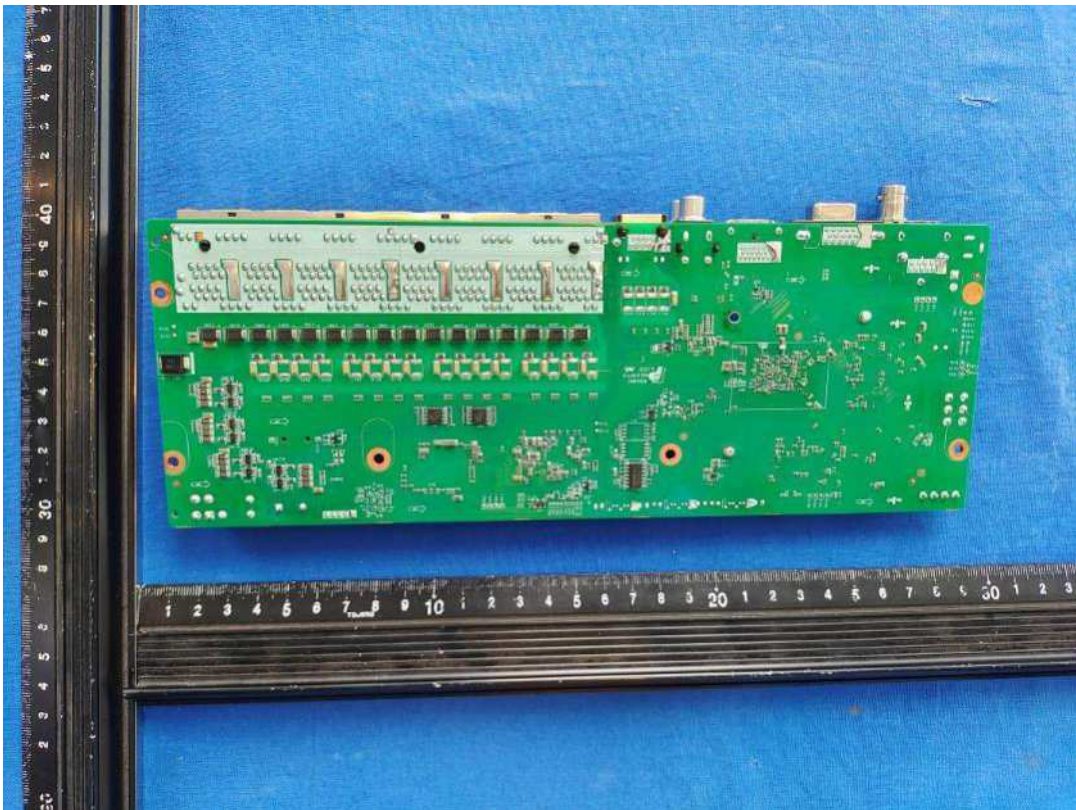
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Picture 81 – PCB view (Model: DS-80572)



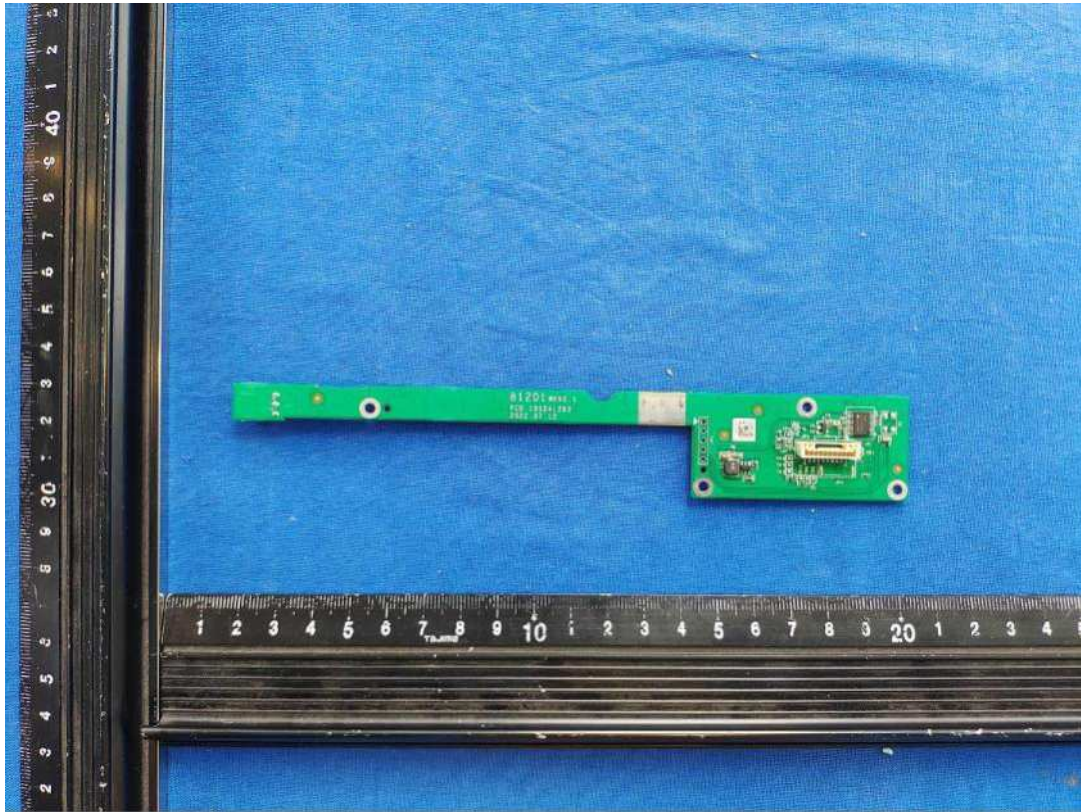
Picture 82 – PCB view (Model: DS-80572)



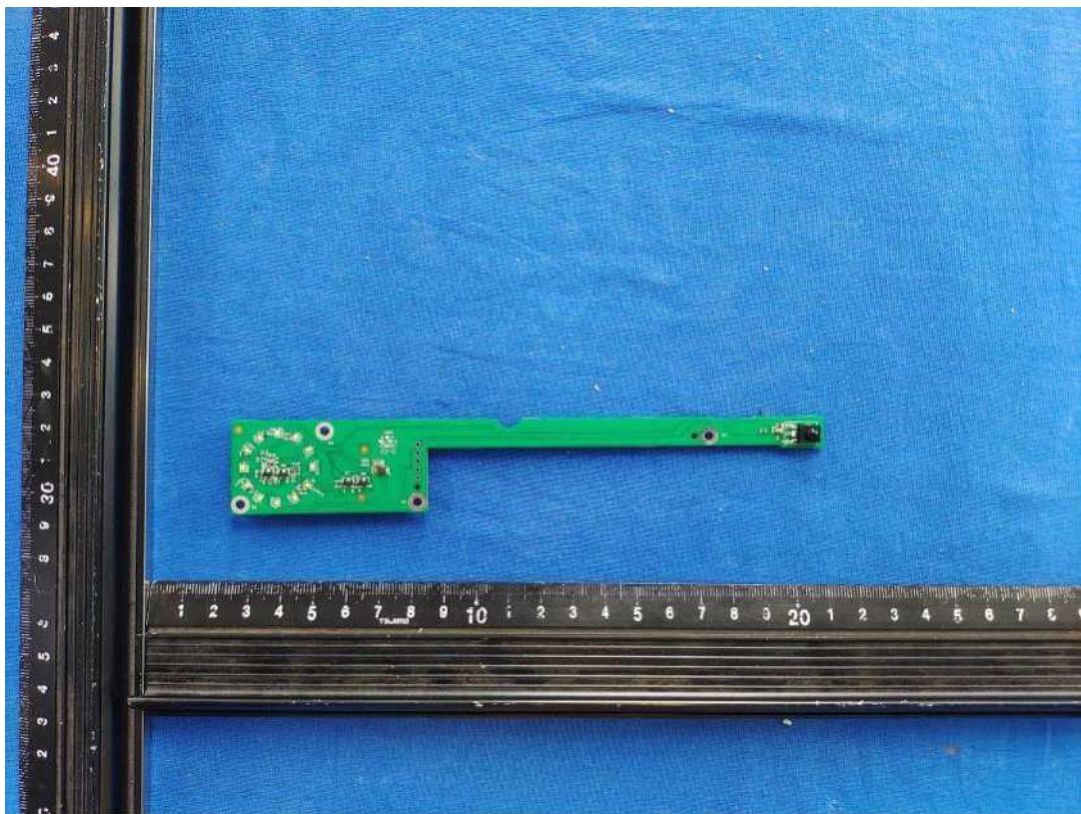
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Picture 83 – Add Front plastic cover PCB view



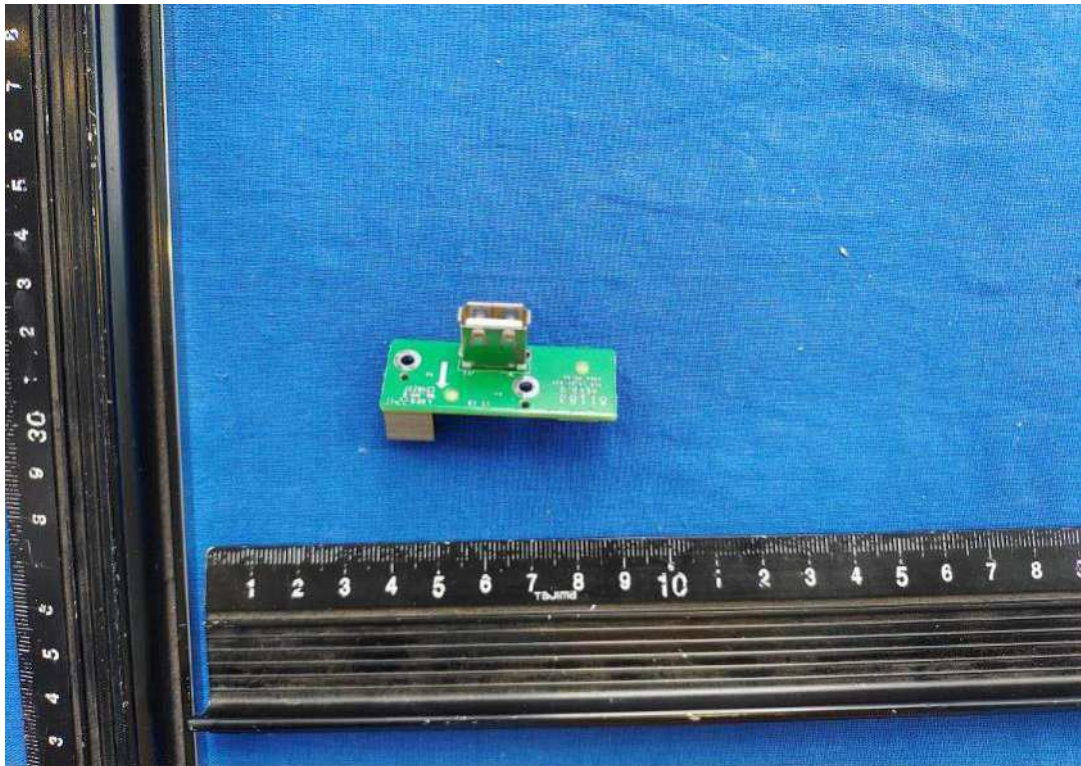
Picture 84 – Add Front plastic cover PCB view



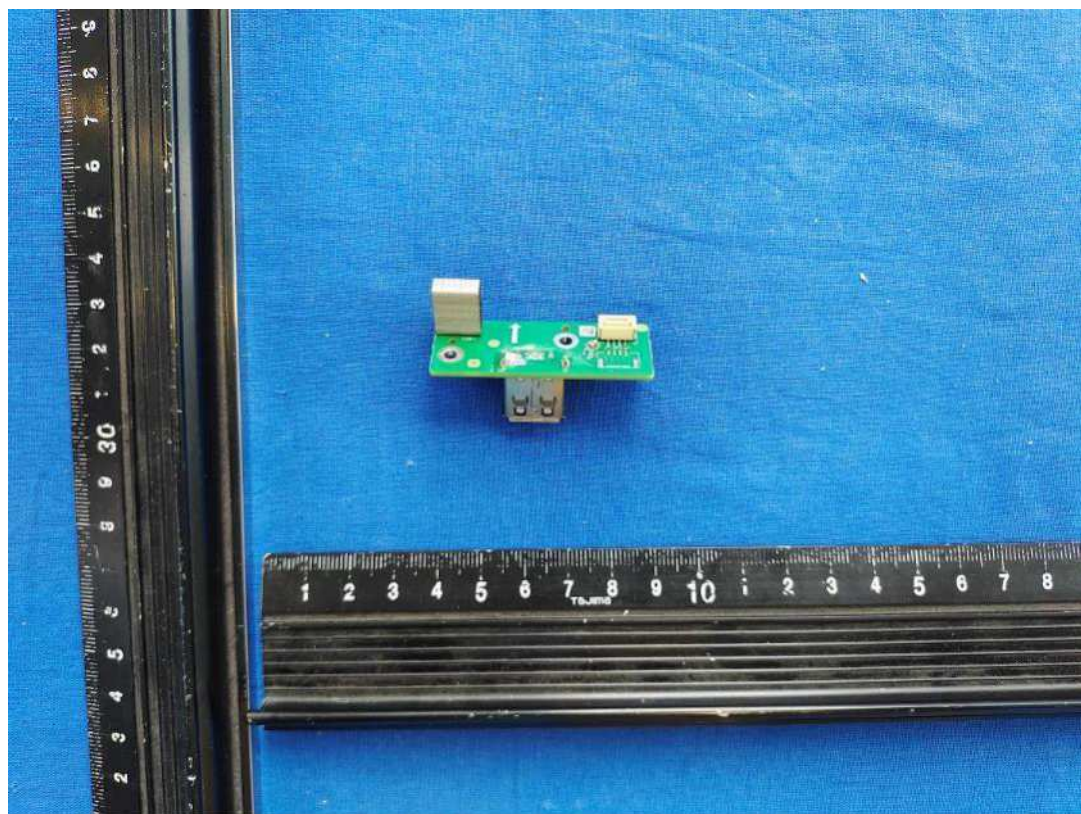
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Picture 85 – Add Front plastic cover USB part PCB view



Picture 86 – Add Front plastic cover USB part PCB view