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.....:	**SHES241202521601**
Date of issue.....:	2024-12-31
Total number of pages.....:	74 Pages
Name of Testing Laboratory preparing the Report.....:	SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.
Applicant's name .....:	Hangzhou Hikvision Digital Technology Co., Ltd.
Address .....:	No.555 Qianmo Road, Binjiang District, Hangzhou 310052, China
Test specification:	
Standard .....:	IEC 62368-1:2023
Test procedure .....:	CB Scheme
Non-standard test method .....:	N/A
TRF template used .....:	IECEE OD-2020-F1:2023, Ed.1.6
Test Report Form No.....:	IEC62368_1F
Test Report Form(s) Originator ....:	UL Solutions (US)
Master TRF .....:	Dated 2023-08-18

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

This report is not valid as a CB Test Report unless signed by an approved IECEE 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 NCB. The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report.

Test item description..... :	Network Video Recorder
Trademark(s)..... :	HIKVISION
Manufacturer..... :	Same as applicant
Model/Type reference..... :	See page 9
Ratings..... :	100V-240V~, 50/60Hz, 2,1 A Max; Class I

Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):

☒	**CB Testing Laboratory:**	SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.	
Testing location/ address.....:		588 West Jindu Road, Xinqiao, Songjiang, 201612 Shanghai, China.	
Tested by (name, function, signature).....:		Leo Wang Project Engineer	
Approved by (name, function, signature)...:		Emilien Li Reviewer	
☐	**Testing procedure: CTF Stage 1:**		
Testing location/ address.....:			
Tested by (name, function, signature).....:			
Approved by (name, function, signature)...:			
☐	**Testing procedure: CTF Stage 2:**		
Testing location/ address.....:			
Tested by (name + signature) .....:			
Witnessed by (name, function, signature)..:			
Approved by (name, function, signature)...:			
☐	**Testing procedure: CTF Stage 3:**		
☐	**Testing procedure: CTF Stage 4:**		
Testing location/ address.....:			
Tested by (name, function, signature).....:			
Witnessed by (name, function, signature)..:			
Approved by (name, function, signature)...:			
Supervised by (name, function, signature) :			

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

Attachment 1 – 24 pages of Photos documents;

Attachment 2 – 23 pages of European group differences and national differences;

Attachment 3 – 3 pages of Safety information.

Summary of testing:

The sample(s) tested complies with the requirements of IEC 62368-1: 2023 and EN IEC 62368-1:2024+ A11:2024.

All data in this report are based on SGS test report KSES220400030601 dated on 2022-04-29, KSES220400030601-M1 dated on 2022-08-10 and KSES220400030601-M2 dated on 2022-10-27 with the following changes:

- Update test standard to IEC 62368-1: 2023 and EN IEC 62368-1:2024+ A11:2024.

After evaluation, no additional test was considered necessary.

Unless otherwise specified, the EUT with model DS-8632NXI-K8 was selected as representative model for full testing and test with EFC-08E12M DC fan. The EUT with model DS-9664NI-M8(with power supply DPS-150AB-24 A) was selected as representative model for Cl B.2.5, 5.4.1.4&9.2.6, 5.2, 5.4.9, 5.6.6, 5.7, B.3, B.4, M.3, Annex Q and Annex T testing due to the the main board, internal power supply and front panel are different. The EUT with model iDS-9664NXI-M8/X was selected as representative model for Cl B.2.5 testing due to the main board is different.

Maximum normal load:
USB 2.0 load 0,5A;

USB 3.0 load 0,9A;

DC12V load 1A;

Ctrl 12V load 1A.

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

K-type thermocouple used for temperature measurement.

Tests performed (name of test and test clause):	**Testing location:**
☒ 4. General requirements ☒ 5. Electrically-caused injury ☒ 6. Electrically-caused fire ☒ 7. Injury caused by hazardous substances ☒ 8. Mechanically-caused injury ☒ 9. Thermal burn injury ☒10. Radiation ☒ Annex B. Normal operating condition tests, abnormal operating condition tests and single fault condition tests	SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. 588 West Jindu Road, Xinqiao, Songjiang, 201612 Shanghai, China.

☒ Annex F.3.9. Performance of Marking test ☒ Annex M Equipment containing batteries and their protection circuits ☒ Annex Q. Limited Power Source ☒ Annex T. Mechanical strength tests ☒ Annex V. Determination of accessible parts	

Summary of compliance with National Differences

- IECEE Member countries that are also CENELEC members
  Compliance with Group Differences evaluated ☒ **yes** ☐ **No** ☐ N/A

- IECEE Member countries with published National Differences which were evaluated:
  N/A

- IECEE Member countries that did not publish any National Differences:
  N/A

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

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

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

Information on uncertainty of measurement:
The uncertainties of measurement are calculated by the laboratory based on application of criteria given by OD-5014 for test equipment and application of test methods, decision sheets and operational procedures of IECEE.
IEC Guide 115 provides guidance on the application of measurement uncertainty principles and applying the decision rule when reporting test results within IECEE scheme, noting that the reporting of the measurement uncertainty for measurements is not necessary unless required by the test standard or customer.
Calculations leading to the reported values are on file with the NCB and testing laboratory that conducted the testing.

Copy of marking plate:

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

Marking for model DS-8632NXI-K8

Marking for model DS-9664NI-M8

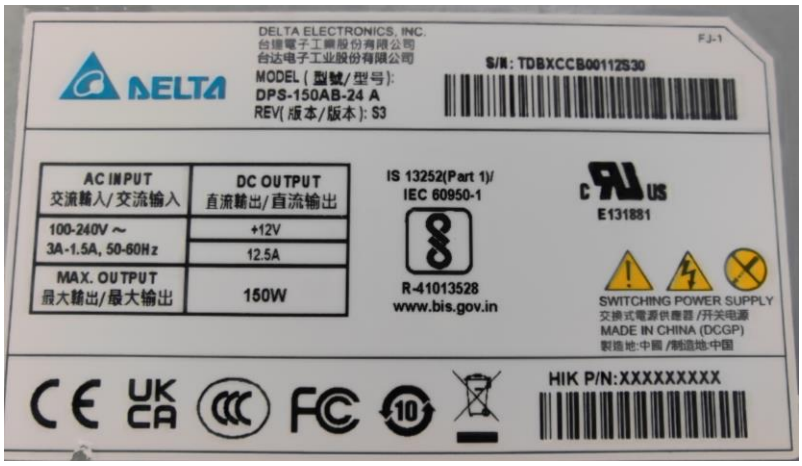
Marking for model iDS-9664NXI-M8/X

Marking for built-in power supply (model HK250-48PP)

Marking for Alternative built-in power supply (model U1A-G10150-S-A1)

Marking for Alternative built-in power supply (model SFXA1151A)

Marking for Alternative built-in power supply (model DPS-150AB-24 A)



Remark:

1) The Height of CE logo shall not be less than 5 mm; Height of WEEE logo shall not be less than 7 mm.
2) The marking plates for other models are of the same pattern except for model name.

As declared by the applicant, the importer (and manufacturer, if it is different)'s name, registered trade name or registered trade mark and the postal address will be marked on the products before being placed on the market. The contact details shall be in a language easily understood by end-users and market surveillance authorities.

Test item particulars:	
Product group ..... :	☒ end product ☐ built-in component
Classification of use by..... :	☒ Ordinary person ☐ Children likely present ☒ Instructed person ☒ Skilled person
Supply connection ..... :	☒ AC mains ☐ DC mains ☐ not mains connected: ☐ ES1 ☐ ES2 ☐ ES3
Supply tolerance ..... :	☒ +10%/-10% ☐ +20%/-15% ☐ + %/ - % ☐ None
Supply connection – type ..... :	☒ pluggable equipment type A - ☐ non-detachable supply cord ☒ appliance coupler ☐ direct plug-in ☐ pluggable equipment type B - ☐ non-detachable supply cord ☐ appliance coupler ☐ permanent connection ☐ mating connector ☐ other:
Considered current rating of protective device..... :	☒ 20 A for or North America; ☒ 16 A for other markets except North America. Location: ☒ building ☐ equipment ☐ N/A
Equipment mobility ..... :	☒ movable ☐ hand-held ☐ transportable ☐ direct plug-in ☐ stationary ☐ for building-in ☐ wall/ceiling-mounted ☐ SRME/rack-mounted ☐ other:
Overvoltage category (OVC) ..... :	☐ OVC I ☒ OVC II ☐ OVC III ☐ OVC IV ☐ other:
Class of equipment ..... :	☒ Class I ☐ Class II ☐ Class III ☐ Not classified ☐
Special installation location ..... :	☒ N/A ☐ restricted access area ☐ outdoor location ☐
Pollution degree (PD) ..... :	☐ PD 1 ☒ PD 2 ☐ PD 3
Manufacturer's specified T_{ma} ..... :	55 °C ☐ Outdoor: minimum °C
IP protection class ..... :	☒ IPX0 ☐ IP___
Power systems ..... :	☒ TN ☒ TT ☐ IT - V_{L-L} ☐ not AC mains
Altitude during operation (m) ..... :	☒ 2000 m or less ☐ m
Altitude of test laboratory (m) ..... :	☐ 2000 m or less ☒ 100 m
Mass of equipment (kg) ..... :	6,81 kg (for DS-8632NXI-K8), 6,50 kg (for DS-9664NI-M8)

Possible test case verdicts:

- test case does not apply to the test object..... : N/A

- test object does meet the requirement..... : P (Pass)

- test object does not meet the requirement..... : F (Fail)

Testing ..... :

Date of receipt of test item..... : Original: 2022-09-07

Date (s) of performance of tests ..... : Original: 2022-09-07 to 2022-10-20

General remarks:

"(See Enclosure #)" refers to additional information appended to the report.
"(See appended table)" refers to a table appended to the report.

Throughout this report a ☒ comma / ☐ point is used as the decimal separator.

Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 02:

The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided.....:	☒ **Yes** ☐ **Not applicable** **Factory declared letter.PDF, date on 2023-01-04**

When differences exist; they shall be identified in the General product information section.

Name and address of factory (ies)..... :

1. Hangzhou Hikvision Technology Co., Ltd.
   No. 700, Dongliu Road, Binjiang District,
   Hangzhou City, Zhejiang, 310052, China
2. Hangzhou Hikvision Electronics Co., Ltd.
   No. 299, Qiushi Road, Tonglu Economic
   Development Zone, Tonglu County, Hangzhou,
   Zhejiang, 311500, China
3. Chongqing Hikvision technology Co., Ltd.
   No. 118, Haikang Road, Area C, Jianqiao
   Industrial Park, Dadukou District, Chongqing,
   401325, China

General product information:

Product Description –

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

Model list:

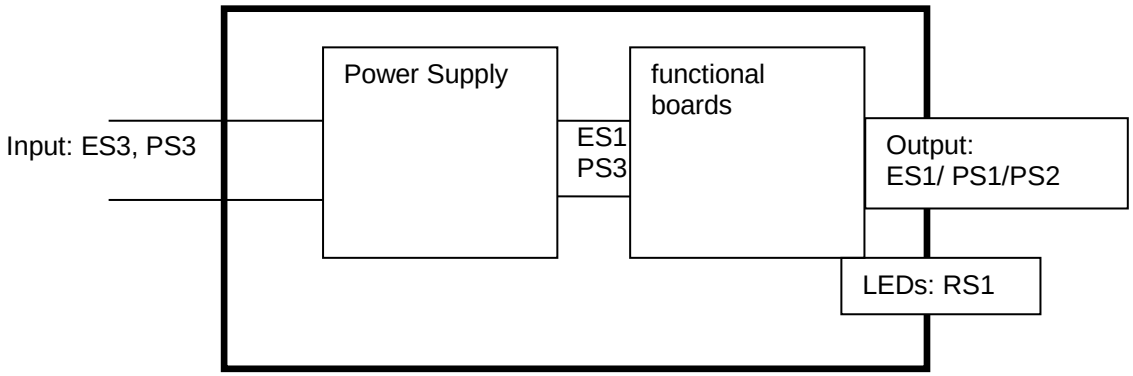
DS-8632NXI-K8	DS-8616NXI-K8	DS-8616NXI-K8UHK
DS-8616NXI-K8CKV	DS-8616NXI-K8UVS	DS-8616NXI-K8KVO
DS-8616NXI-K8HUN	DS-8632NXI-K8UHK	DS-8632NXI-K8CKV
DS-8632NXI-K8UVS	DS-8632NXI-K8KVO	DS-8632NXI-K8HU
The main board, internal power supply and front panel are different from above original models		
DS-9664NI-M8	DS-9664NI-M8/RTA	DS-9664NI-M8/RTB
DS-9664NI-M8/RTC	DS-9664NI-M8/RTD	DS-9664NI-M8/RTE
DS-9664NI-M8/RTF	DS-9664NI-M8/RTG	DS-9664NI-M8/RTH
DS-9664NI-M8/RTI	DS-9664NI-M8/RTJ	DS-9664NI-M8/DX
DS-9664NI-M8/YD	DS-9664NI-M8/ZC	DS-9632NI-M8
DS-9632NI-M8/RTA	DS-9632NI-M8/RTB	DS-9632NI-M8/RTC
DS-9632NI-M8/RTD	DS-9632NI-M8/RTE	DS-9632NI-M8/RTF
DS-9632NI-M8/RTG	DS-9632NI-M8/RTH	DS-9632NI-M8/RTI
DS-9632NI-M8/RTJ	DS-9632NI-M8/DX	DS-9632NI-M8/YD
DS-9632NI-M8/ZC	DS-9616NI-M8	DS-9616NI-M8/RTA
DS-9616NI-M8/RTB	DS-9616NI-M8/RTC	DS-9616NI-M8/RTD
DS-9616NI-M8/RTE	DS-9616NI-M8/RTF	DS-9616NI-M8/RTG
DS-9616NI-M8/RTH	DS-9616NI-M8/RTI	DS-9616NI-M8/RTJ
DS-9616NI-M8/DX	DS-9616NI-M8/YD	DS-9616NI-M8/ZC
The main board are different		
iDS-9616NXI-M8/X	iDS-9616NXI-M8/XUHK	iDS-9616NXI-M8/XCKV
iDS-9616NXI-M8/XUVS	iDS-9616NXI-M8/XKVO	iDS-9616NXI-M8/XHUN
iDS-9616NXI-M8/X/EDU	iDS-9616NXI-M8/X/RTL	iDS-9616NXI-M8/X/NRG
iDS-9616NXI-M8/X/LGX	iDS-9616NXI-M8/X/MFG	iDS-9616NXI-M8/X/RMS
iDS-9632NXI-M8/X	iDS-9632NXI-M8/XUHK	iDS-9632NXI-M8/XCKV
iDS-9632NXI-M8/XUVS	iDS-9632NXI-M8/XKVO	iDS-9632NXI-M8/XHUN
iDS-9632NXI-M8/X/EDU	iDS-9632NXI-M8/X/RTL	iDS-9632NXI-M8/X/NRG
iDS-9632NXI-M8/X/LGX	iDS-9632NXI-M8/X/MFG	iDS-9632NXI-M8/X/RMS
iDS-9664NXI-M8/X	iDS-9664NXI-M8/XUHK	iDS-9664NXI-M8/XCKV
iDS-9664NXI-M8/XUVS	iDS-9664NXI-M8/XKVO	iDS-9664NXI-M8/XHUN
iDS-9664NXI-M8/X/EDU	iDS-9664NXI-M8/X/RTL	iDS-9664NXI-M8/X/NRG
iDS-9664NXI-M8/X/LGX	iDS-9664NXI-M8/X/MFG	iDS-9664NXI-M8/X/RMS
DS-96128NI-M8	DS-96128NI-M8on	DS-96128NI-M8UHK
DS-96128NI-M8CKV	DS-96128NI-M8UVS	DS-96128NI-M8KVO
DS-96128NI-M8HUN	--	--

OVERVIEW OF ENERGY SOURCES AND SAFEGUARDS				
Clause	**Possible Hazard**			
5	Electrically-caused injury			
Class and Energy Source (e.g. ES3: Primary circuit)	Body Part (e.g. Ordinary)	Safeguards		
		B	S	R
ES3: Power input	Ordinary, Instructed and Skilled Person	Basic Insulation	Protective Earthing	Enclosure / reinforced insulation
ES1: Other internal circuit	Ordinary, Instructed and Skilled Person	-	-	-
ES1: All accessible parts	Ordinary, Instructed and Skilled Person	-	-	-
6	Electrically-caused fire			
Class and Energy Source (e.g. PS2: 100 Watt circuit)	Material part (e.g. Printed board)	Safeguards		
		B	1st S	2nd S
PS3: All internal circuits/Input	Enclosure, materials inside and outside the enclosure	meet clause 6.3	meet clause 6.4.6	-
PS1/PS2: Output ports	Enclosure, materials inside and outside the enclosure	meet clause 6.3	-	-
7	Injury caused by hazardous substances			
Class and Energy Source (e.g. Ozone)	Body Part (e.g., Skilled)	Safeguards		
		B	S	R
RTC Battery	Ordinary, Instructed and Skilled Person	-	-	Comply with Annex M
8	Mechanically-caused injury			
Class and Energy Source (e.g. MS3: Plastic fan blades)	Body Part (e.g. Ordinary)	Safeguards		
		B	S	R
MS1: Sharp edges and corners	Ordinary, Instructed and Skilled Person	-	-	-
MS1: Equipment mass	Ordinary, Instructed and Skilled Person	-	-	-
MS1: DC fan	Ordinary, Instructed and Skilled Person	-	-	-
9	Thermal burn			
Class and Energy Source (e.g. TS1: Keyboard caps)	Body Part (e.g., Ordinary)	Safeguards		
		B	S	R
TS1: The outer enclosure of the equipment	Ordinary, Instructed and Skilled Person	-	-	-
10	Radiation			
Class and Energy Source (e.g. RS1: PMP sound output)	Body Part (e.g., Ordinary)	Safeguards		
		B	S	R

RS1: LEDs only as indicator	Ordinary, Instructed and Skilled Person	-	-	-
Supplementary Information: “B” – Basic Safeguard; “S” – Supplementary Safeguard; “R” – Reinforced Safeguard				

ENERGY SOURCE DIAGRAM

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



Enclosure: ES1, MS1, TS1
Mass: MS1; DC fan: MS1

■ **ES** ■ **PS** ■ **MS** ■ **TS** ■ **RS**

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
4	**GENERAL REQUIREMENTS**		P
4.1.1	Acceptance of materials, components and subassemblies		P
4.1.2	Use of components	Certified components are used in accordance with their ratings, certifications and they comply with applicable parts of this standard.Components not certified are used in accordance with their ratings and they comply with applicable parts of this standard and the relevant component standard.Components, for which no relevant IEC-standard exists, have been tested under the conditions occurring in the equipment, using applicable parts of this standard.	P
4.1.3	Equipment design and construction		P
4.1.4	Specified ambient temperature for outdoor use (°C) .....:		N/A
4.1.5	Constructions and components not specifically covered	No such part	N/A
4.1.8	Liquids, refrigerants and liquid filled components (LFCs)	(See Clause G.15)	N/A
4.1.15	Markings and instructions	(See Annex F)	P
4.4.3	Safeguard robustness		P
4.4.3.1	General		P
4.4.3.2	Steady force tests	(See Annex T.2,T.5)	P
4.4.3.3	Drop tests	(See Clause T.7)	N/A
4.4.3.4	Impact tests	(See Annex T.6)	P
4.4.3.5	Internal accessible safeguard tests	Not accessible by ordinary person	N/A
4.4.3.6	Glass impact tests	(See Clause T.9)	N/A
4.4.3.7	Glass fixation test		N/A
	Glass impact test (1J)	(See Clause T.9)	N/A
	Push/pull test (10 N)		N/A
4.4.3.8	Thermoplastic material tests	(See Annex T.8)	P
4.4.3.9	Air comprising a safeguard	(See Annex T)	N/A
4.4.3.10	Accessibility, glass, safeguard effectiveness		P

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Clause	Requirement + Test	Result - Remark	Verdict
4.4.4	Displacement of a safeguard by an insulating liquid		N/A
4.4.5	Safety interlocks	(See Annex K)	N/A
4.5	**Explosion**		P
4.5.1	General	(See Annex M for batteries)	P
4.5.2	No explosion during normal/abnormal operating conditions	(See Clause B.2, B.3)	P
	No harm by explosion during single fault conditions	(See Clause B.4)	P
4.6	**Fixing of conductors and conductive parts**		P
	Fix conductors and conductive parts not to defeat a safeguard		P
	Compliance is checked by test.....:	(See Clause T.2)	P
4.7	**Equipment for direct insertion into mains socket–outlets**		N/A
4.7.2	Mains plug part complies with relevant standard....:		N/A
4.7.3	Torque (Nm) .....:		N/A
4.8	**Equipment containing coin or button cell batteries**		N/A
4.8.1	General		N/A
4.8.2	Instructional safeguard.....:	This equipment is not suitable for use in locations where children are likely to be present.	N/A
4.8.3	Coin or button cell battery compartment, door or cover construction		N/A
	Open torque test		N/A
4.8.4.2	Stress relief test	(See Clause T.8)	N/A
4.8.4.3	Battery replacement test		N/A
4.8.4.4	Drop test	(See Clause T.7)	N/A
4.8.4.5	Impact test	(See Clause T.6)	N/A
4.8.4.6	Crush test		N/A
4.8.5	Compliance		N/A
	30N force test with test probe		N/A
	20N force test with test hook		N/A
4.9	**Likelihood of fire or shock due to entry of conductive object**		P
4.10	**Component requirements**		P
4.10.1	Disconnect device	(See Annex L)	P
4.10.2	Switches and relays	(See Annex G)	P
4.10.3	Mains power supply cords	(See Clause G.7)	N/A
4.10.4	Batteries and their protection circuits	(See Annex M)	P

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Clause	Requirement + Test	Result - Remark	Verdict
5	**ELECTRICALLY-CAUSED INJURY**		P
5.2	**Classification and limits of electrical energy sources**		P
5.2.2	ES1 and ES2 limits		P
5.2.2.2	Steady-state voltage and current limits ..... :	(See appended table 5.2)	P
5.2.2.3	Capacitance limits ..... :	(See appended table 5.2)	N/A
5.2.2.4	Single pulse limits..... :	(See appended table 5.2)	N/A
5.2.2.5	Limits for repetitive pulses..... :	(See appended table 5.2)	N/A
5.2.2.6	Ringing signals	(See Annex H)	N/A
5.2.2.7	Audio signals	(See Clause E.1)	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
5.3.1 a)	ES2/ES3 circuits that are not ES2/ES3 mains		N/A
5.3.1 b)	Skilled persons not unintentional contact ES3 bare conductors		N/A
5.3.2.1	Accessibility to electrical energy sources and safeguards		P
	Accessibility to outdoor equipment bare parts		P
5.3.2.2	Contact requirements		P
	Test with test probe from Annex V..... :		-
5.3.2.2 a)	Air gap – electric strength test potential (V)..... :	(See appended table 5.4.9)	N/A
5.3.2.2 b)	Air gap – distance (mm) ..... :	More than 2mm	P
5.3.2.3	Compliance		P
5.3.2.4	Terminals for connecting stripped wire		N/A
5.4	**Insulation materials and requirements**		N/A
5.4.1.2	Properties of insulating material		P
5.4.1.3	Compliance		N/A
	Non-hygroscopic materials		P
5.4.1.4	Maximum operating temperature for insulating materials ..... :	(See appended table 5.4.1.4)	P
5.4.1.5	Pollution degrees..... :	2	P
5.4.1.5.2	Test for pollution degree 1 environment and for an insulating compound		N/A
5.4.1.5.3	Thermal cycling test		N/A
5.4.1.6	Insulation in transformers with varying dimensions		N/A
5.4.1.7	Insulation in circuits generating starting pulses		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.4.1.8	Determination of working voltage ..... :	Certified power supplies	P
5.4.1.9	Insulating surfaces		P
5.4.1.10	Thermoplastic parts on which conductive metallic parts are directly mounted		N/A
5.4.1.10.2	Vicat test..... :	(See appended table 5.4.1.10.2)	N/A
5.4.1.10.3	Ball pressure test..... :	Certified power supplies	P
5.4.2	Clearances	Refer to Internal approved power supply. EUT with fully wrapped built-in certified power supply, without exposed primary circuit.	P
5.4.2.1	General requirements		P
	Clearances in circuits connected to AC Mains, Alternative method	(See Annex X)	N/A
5.4.2.2	Procedure 1 for determining clearance	Certified power supplies	P
	Temporary overvoltage ..... :	2000	—
5.4.2.3	Procedure 2 for determining clearance		P
5.4.2.3.2.2	AC mains transient voltages..... :	2500	—
5.4.2.3.2.3	DC mains transient voltages ..... :		—
5.4.2.3.2.4	External circuit transient voltages ..... :		—
5.4.2.3.2.5	Transient voltage determined by measurement..... :		—
5.4.2.3.3	Exceptions of determining required withstand voltage..... :		N/A
5.4.2.3.4	Determining clearances using required withstand voltage..... :	(See appended table 5.4.2, 5.4.3)	N/A
5.4.2.4	Determining the adequacy of a clearance using an electric strength test ..... :	(See appended table 5.4.2, 5.4.3)	N/A
5.4.2.5	Multiplication factors for clearances and test voltages ..... :		N/A
5.4.2.6	Clearance measurement..... :	(See appended table 5.4.2, 5.4.3)	P
5.4.3	Creepage distances	Refer to Internal approved power supply. EUT with fully wrapped built-in certified power supply, without exposed primary circuit.	P
5.4.3.1	General		P
5.4.3.3	Material group and CTI ..... :	IIIb	—
5.4.3.4	Creepage distances measurement..... :	(See appended table 5.4.3)	P

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Clause	Requirement + Test	Result - Remark	Verdict
5.4.4	Solid insulation	Certified power supplies	P
5.4.4.1	General requirements		P
5.4.4.2	Minimum distance through insulation .....:	(See appended table 5.4.4.2)	P
5.4.4.3	Insulating compound forming solid insulation		N/A
5.4.4.4	Solid insulation in semiconductor devices		N/A
5.4.4.5	Insulating compound forming cemented joints		N/A
5.4.4.6	Thin sheet material	Certified power supplies	P
5.4.4.6.1	General requirements	Certified power supplies	P
5.4.4.6.2	Separable thin sheet material	Certified power supplies	P
	Number of layers (pcs) .....:	Certified power supplies	P
5.4.4.6.3	Non-separable thin sheet material		N/A
	Number of layers (pcs) .....:		N/A
5.4.4.6.4	Standard test procedure for non-separable thin sheet material .....:	(See appended table 5.4.9)	N/A
5.4.4.6.5	Mandrel test		N/A
5.4.4.7	Solid insulation in wound components		N/A
5.4.4.9	Solid insulation at frequencies >30 kHz, E_P, K_R, d, V_{PW} (V).....:	(See appended table 5.4.4.9)	N/A
	Alternative by electric strength test, tested voltage (V), K_R .....:	(See appended tables 5.4.4.9 and 5.4.9)	N/A
5.4.5	Antenna terminal insulation		N/A
5.4.5.1	General		N/A
5.4.5.2	Voltage surge test		N/A
5.4.5.3	Insulation resistance (MΩ) .....:		N/A
	Electric strength test .....:	(See appended table 5.4.9)	N/A
5.4.6	Insulation of internal wire as part of supplementary safeguard		N/A
5.4.7	Tests for semiconductor components and for cemented joints		N/A
5.4.8	Humidity conditioning	Evaluated in approved power supplies unit	P
	Relative humidity (%), temperature (°C), duration (h).....:		—
5.4.9	Electric strength test	(See appended table 5.4.9)	P
5.4.10	Safeguards against transient voltages from external circuits		N/A
5.4.10.1	Parts and circuits separated from external circuits		N/A
5.4.10.2	Test methods		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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..... :	(See appended table 5.4.9)	N/A
5.4.10.3	Verification for insulation breakdown ..... :		N/A
5.4.11	Separation between external circuits and earth		N/A
5.4.11.1	Exceptions to separation between external circuits and earth		N/A
5.4.11.2	Requirements		N/A
	Surge suppressors bridge separation between external circuit and earth		N/A
	Rated operating voltage U_{op} (V)..... :		—
	Nominal voltage U_{peak} (V) ..... :		—
	Max increase due to variation ΔU_{sp} ..... :		—
	Max increase due to ageing ΔU_{sa} ..... :		—
5.4.11.3	Test method and compliance ..... :	(See appended table 5.4.9)	N/A
	Test voltage (V) of additional test ..... :		—
	Measured current (mA) of additional test..... :		N/A
5.4.12	Insulating liquid		N/A
5.4.12.1	General requirements		N/A
5.4.12.2	Electric strength of an insulating liquid..... :	(See appended table 5.4.9)	N/A
5.4.12.3	Compatibility of an insulating liquid		N/A
	Thermal classification of IEC 60085 ..... :		—
5.4.12.4	Container for insulating liquid		N/A
5.5	**Components as safeguards**		P
5.5.1	General		P
5.5.2	Capacitors and RC units	Certified power supplies	P
5.5.2.1	General requirement		N/A
5.5.2.2	Capacitor discharge after disconnection of a connector..... :	(See appended table 5.5.2.2)	N/A
5.5.3	Transformers	Certified power supplies	P
5.5.4	Optocouplers	(See sub-clause 5.4 or Clause G.12)	P
5.5.5	Relays		N/A
5.5.6	Resistors		N/A
	Application type of resistors ..... :		—
5.5.7	Surge suppressors	Certified power supplies	P

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Clause	Requirement + Test	Result - Remark	Verdict
	GDT……:		N/A
5.5.8	Insulation between the mains and an external circuit consisting of a coaxial cable.....:		N/A
	Insulation resistance (MΩ) .....:		N/A
	Electric strength test .....:	(See appended table 5.4.9)	N/A
5.5.9	Safeguards for socket-outlets in outdoor equipment		N/A
	RCD rated residual operating current (mA).....:		—
5.6	**Protective conductor**		
5.6.2	Requirements for protective conductors		P
5.6.2.1	General requirements		P
5.6.2.2	Colour of insulation		P
5.6.3	Requirements for protective earthing conductors		P
	Protective earthing conductor size (mm^2) .....:	Certified AC inlet	—
	Protective earthing conductor serving as a reinforced safeguard		N/A
	Protective earthing conductor serving as a double safeguard		N/A
5.6.4	Requirements for protective bonding conductors		P
5.6.4.1	Protective bonding conductors		P
	Protective bonding conductor size (mm^2).....:	Certified power supplies	—
5.6.4.2	Protective current rating (A) .....:	16A (20A for Canada and the USA)	P
5.6.5	Terminals for protective conductors		P
5.6.5.1	Terminal size for connecting protective earthing conductors (mm).....:	Certified AC inlet	P
	Terminal size for connecting protective bonding conductors (mm) .....:	Certified power supplies	P
	Relevant IEC standard.....:		N/A
5.6.5.2	Corrosion		P
5.6.6	Resistance of the protective bonding system	All the conductors meet the required conductor sizes. All the Terminals meet the required Terminal sizes.	P
5.6.6.1	Requirements		P
5.6.6.2	Test method.....:	(See appended table 5.6.6)	P
5.6.6.3	Resistance (Ω) or voltage drop.....:	(See appended table 5.6.6)	P
5.6.7	Reliable connection of a protective earthing conductor		P

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Clause	Requirement + Test	Result - Remark	Verdict
5.6.8	Functional earthing		N/A
	Conductor size (mm^2) ..... :		N/A
	Class II with functional earthing marking ..... :		N/A
	Appliance inlet cl & cr (mm)..... :		N/A
5.7	**Prospective touch voltage, touch current and protective conductor current**		P
5.7.2	Measuring devices and networks		P
5.7.2.1	Measurement of touch current		P
5.7.2.2	Measurement of voltage		P
5.7.3	Equipment set-up, supply connections and earth connections		P
5.7.4	Unearthed accessible parts..... :	(See appended table 5.7.4)	P
5.7.5	Earthed accessible conductive parts ..... :	(See appended table 5.7.5)	P
5.7.6	Requirements when touch current exceeds ES2 limits		N/A
	Protective conductor current (mA)..... :		N/A
	Instructional Safeguard ..... :		N/A
5.7.7	Prospective touch voltage and touch current associated with external circuits		N/A
5.7.7.1	Touch current from coaxial cables		N/A
5.7.7.2	Prospective touch voltage and touch current associated with paired conductor cables		N/A
5.7.8	Summation of touch currents from external circuits		N/A
	a) Equipment connected to an earthed external circuit, current (mA)..... :		N/A
	b) Equipment connected to an unearthed external circuit, current (mA)..... :		N/A
5.8	**Backfeed safeguard in battery backed up supplies**		N/A
	Mains terminal ES ..... :	(See appended table 5.8)	N/A
	Air gap (mm) ..... :	(See appended table 5.4.2, 5.4.3)	N/A

6	**ELECTRICALLY- CAUSED FIRE**		P
6.2	**Classification of power sources and potential ignition sources**		P
6.2.2	Power source circuit classifications ..... :	(See appended table 6.2.2)	P
6.2.3	Classification of potential ignition sources		P
6.2.3.1	Arcing PIS ..... :	(See appended table 6.2.3.1)	P
6.2.3.2	Resistive PIS ..... :	(See appended table 6.2.3.2)	P

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Clause	Requirement + Test	Result - Remark	Verdict
6.3	**Safeguards against fire under normal operating and abnormal operating conditions**		P
6.3.1	No ignition and attainable temperature value less than 90 % defined by ISO 871 or less than 300 °C for unknown materials.....:	(See appended table B.1.5 and B.3)	P
	Combustible materials not inside a fire enclosure....:		N/A
6.4	**Safeguards against fire under single fault conditions**		P
6.4.1	Safeguard method.....:		—
6.4.2	Reduction of the likelihood of ignition under single fault conditions in PS1 circuits		N/A
6.4.3	Reduction of the likelihood of ignition under single fault conditions in PS2 and PS3 circuits		N/A
6.4.3.1	Supplementary safeguards		N/A
6.4.3.2	Single fault conditions.....:	(See appended table B.4)	N/A
	Special conditions for temperature limited by fuse		N/A
6.4.4	Control of fire spread in PS1 circuits	Control fire spread.	P
6.4.5	Control of fire spread in PS2 circuits		P
6.4.5.2	Supplementary safeguards	Min V-1 for PCBs See also table 4.1.2	P
6.4.6	Control of fire spread in PS3 circuits	Certified componentsFire enclosure used	P
6.4.7	Separation of combustible materials from a PIS	No combustible material in PIS	N/A
6.4.7.2	Separation by distance		N/A
6.4.7.3	Separation by a fire barrier		N/A
6.4.8	Fire enclosures and fire barriers		P
6.4.8.2	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	Fire enclosure is metal and V-0 plastic.	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 and properties		P
	Openings dimensions (mm) .....:	Top: No opening	P
	Flammability tests for the top of a fire enclosure	(See Clause S.2)	N/A
6.4.8.3.4	Bottom openings and properties	No openings	P
	Openings dimensions (mm) .....:		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Flammability tests for the bottom of a fire enclosure	(See Clause S.3)	N/A
	Instructional Safeguard.....:		N/A
6.4.8.3.5	Side openings and properties		P
	Openings dimensions (mm) .....:	Left/right side: Numerous hexagons with maximum dimension 4mm. The opening does not fall within the area indicated by the 5 degree angle in Figure 44.	P
6.4.8.3.6	Integrity of a fire enclosure, condition met: a), b) or c).....:		N/A
6.4.8.4	Separation of a PIS from a fire enclosure and a fire barrier distance (mm) or flammability rating.....:	Fire enclosure is metal and V-0 plastic.	P
6.4.9	Flammability of insulating liquid		P
	Auto ignition temperature (°C).....:		N/A
	Flashpoint temperature (°C).....:		N/A
6.5	**Internal and external wiring**		N/A
6.5.1	General requirements		P
6.5.2	Requirements for interconnection to building wiring .....:		N/A
6.5.3	Internal wiring size (mm^2) for socket-outlets .....:		N/A
6.6	**Safeguards against fire due to the connection to additional equipment**		P

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

8	**MECHANICALLY-CAUSED INJURY**		P
8.2	**Mechanical energy source classifications**		P
8.3	**Safeguards against mechanical energy sources**		P
8.4	**Safeguards against parts with sharp edges and corners**		N/A
8.4.1	Requirements		N/A
	Instructional Safeguard.....:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
8.4.2	Compliance criteria		N/A
8.5	**Safeguards against moving parts**		P
8.5.1	Requirements		N/A
	Fingers, jewellery, clothing, hair, etc., contact with MS2 or MS3 parts	The DC Fan is within the limits under normal and fault conditions. DC Fan DAZA0825B2L-018 in system: K=6x10-7(0,08x402x26002) =519,17 2600/15000+519,17/2400=0,39<1; Alternative DC Fan EE80251B3-000C-A99:K=6x10-7(0,075x402x26002) =468,722600/15000+468,72/2400=0,38<1; Alternative DC Fan EFC-08E12M: K=6x10-7(0,082x402x25002) =492 2500/15000+492/2400=0,37<1 Alternative DC Fan MGA8012KB-O25: K=6x10-7(0,068x402x28002) =511,8 2800/15000+511,8/2400=0,40<1; According to above calculation, moving fans blade are considered not likely to cause injury.	P
	MS2 or MS3 part required to be accessible for the function of the equipment		N/A
	A manually activated stopping device for moving MS3		N/A
	Moving MS3 parts only accessible to skilled person		N/A
8.5.2	Instructional safeguard.....:		N/A
8.5.4	Special categories of equipment containing moving parts		N/A
8.5.4.1	General		N/A
8.5.4.2	Equipment containing work cells with MS3 parts		N/A
8.5.4.2.1	Protection of persons in the work cell		N/A
8.5.4.2.2	Access protection override		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
8.5.4.2.2.1	Override system		N/A
8.5.4.2.2.2	Visual indicator		N/A
8.5.4.2.3	Emergency stop system		N/A
	Maximum stopping distance from the point of activation (m)..... :		N/A
	Space between end point and nearest fixed mechanical part (mm) ..... :		N/A
8.5.4.2.4	Endurance requirements		N/A
	Mechanical system subjected to 100 000 cycles of operation		N/A
	- Mechanical function check and visual inspection		N/A
	- Cable assembly..... :		N/A
8.5.4.3	Equipment having electromechanical device for destruction of media		N/A
8.5.4.3.1	Equipment safeguards		N/A
8.5.4.3.2	Instructional safeguards against moving parts..... :		N/A
8.5.4.3.3	Disconnection from the supply		N/A
8.5.4.3.4	Cut type and test force (N) ..... :		N/A
8.5.4.3.5	Compliance		N/A
8.5.5	High pressure lamps		N/A
	Explosion test..... :		N/A
8.5.5.3	Glass particles dimensions (mm)..... :		N/A
8.6	**Stability of equipment**		N/A
8.6.1	Requirements	MS1	N/A
	Instructional safeguard for MS2 and MS3 television sets..... :		N/A
8.6.2	Static stability		N/A
8.6.2.2	Static stability test..... :		N/A
8.6.2.3	Downward force test		N/A
8.6.3	Relocation stability		N/A
	Wheels diameter (mm) ..... :		—
	Tilt test		N/A
8.6.4	Glass slide test		N/A
8.6.5	Horizontal force test..... :		N/A
8.7	**Equipment mounted to wall, ceiling or other structure**		N/A
8.7.1	Requirements		N/A
	Mount means type..... :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
8.7.2	Test methods		N/A
	Test 1, additional downwards force (N)..... :		N/A
	Horizontal force to a wall or another structure		N/A
	Test 2, number of attachment points and test force (N) ..... :		N/A
	Test 3, nominal diameter (mm) and applied torque (Nm) ..... :		N/A
8.8	**Handles strength**		N/A
8.8.1	General		N/A
8.8.2	Handle strength test		N/A
	Number of handles ..... :		—
	Weight applied (kg)..... :		—
8.9	**Wheels or casters attachment requirements**		N/A
8.9.2	Pull test		N/A
8.10	**Carts, stands and similar carriers**		N/A
8.10.1	General		N/A
8.10.2	Marking and instructions..... :		N/A
8.10.3	Cart, stand or carrier loading test		N/A
	Loading force applied (N)..... :		N/A
8.10.4	Cart, stand or carrier impact test	(See Clause T.6)	N/A
	Loading force applied (N) on each supporting surface..... :		N/A
8.10.5	Mechanical stability		N/A
	Force applied (N)..... :		N/A
8.10.6	Thermoplastic temperature stability	(See Clause T.8)	N/A
8.11	**Mounting means for slide-rail mounted equipment (SRME)**		N/A
8.11.1	General		N/A
8.11.2	Requirements		N/A
	Instructional Safeguard..... :		N/A
8.11.3	Mechanical strength test		N/A
8.11.3.1	Downward force test, force applied (N)..... :		N/A
8.11.3.2	Lateral push force test		N/A
8.11.3.3	Integrity of slide rail end stops		N/A
8.11.4	Compliance criteria		N/A
8.12	**Telescoping or rod antennas**		N/A
	No sharp edges or points		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Button/ball diameter (mm)..... :		N/A

9	**THERMAL BURN INJURY**		P
9.2	**Thermal energy source classifications**		P
9.3	**Touch temperature limits**		P
9.3.1	Touch temperatures of accessible parts ..... :	(See appended table)	P
9.3.2	Test method and compliance		P
9.4	**Safeguards against thermal energy sources**		N/A
9.5	**Requirements for safeguards**		N/A
9.5.1	Equipment safeguard		N/A
9.5.2	Instructional safeguard..... :		N/A
9.6	**Requirements for wireless power transmitters**		N/A
9.6.1	General		N/A
9.6.2	Specification of the foreign objects		N/A
9.6.3	Test method and compliance criteria ..... :	(See appended table 9.6)	N/A

10	**RADIATION**		P
10.2	**Radiation energy source classifications**		P
10.2.1	General classification		P
	Lasers ..... :		—
	Lamps and lamp systems..... :	RS1 for LEDs only as indicator.	—
	Image projectors..... :		—
	X-Ray ..... :		—
	Personal music player..... :		—
10.3	**Safeguards against laser radiation**		N/A
	The standard(s) equipment containing laser(s) comply ..... :		N/A
10.4	**Safeguards against optical radiation from lamps and lamp systems (including LED types)**		P
10.4.1	General requirements		P
	Instructional safeguard provided for accessible radiation level needs to exceed		P
	Risk group marking and location ..... :	RS1 for LEDs only as indicator.	P
	Information for safe operation and installation		P
10.4.2	Requirements for equipment safeguards		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	UV radiation exposure ..... :	(See Annex C)	N/A
10.4.3	Instructional safeguard..... :		N/A
10.5	**Safeguards against X-radiation**		N/A
10.5.1	Requirements		N/A
	Instructional safeguard for skilled persons..... :		N/A
10.5.3	Maximum radiation (pA/kg) ..... :	(See appended tables B.3 & B.4)	N/A
10.6	**Safeguards against acoustic energy sources**		N/A
10.6.1	General		N/A
10.6.2	Classification		N/A
	Acoustic output $L_{Aeq,T}$, dB(A) ..... :		N/A
	Unweighted RMS output voltage (mV)..... :		N/A
	Digital output signal (dBFS)..... :		N/A
10.6.3	Requirements for dose-based systems		N/A
10.6.3.1	General requirements		N/A
10.6.3.2	Dose-based warning and automatic decrease		N/A
10.6.3.3	Exposure-based warning and requirements		N/A
	30 s integrated exposure level (MEL30)..... :		N/A
	Warning for MEL ≥ 100 dB(A) ..... :		N/A
10.6.4	Measurement methods		N/A
10.6.5	Protection of persons		N/A
	Instructional safeguards..... :		N/A
10.6.6	Requirements for listening devices (headphones, earphones, etc.)		N/A
10.6.6.1	Corded listening devices with analogue input		N/A
	Listening device input voltage (mV)..... :		N/A
10.6.6.2	Corded listening devices with digital input		N/A
	Max. acoustic output $L_{Aeq,T}$, dB(A) ..... :		N/A
10.6.6.3	Cordless listening devices		N/A
	Max. acoustic output $L_{Aeq,T}$, dB(A) ..... :		N/A

B	**NORMAL OPERATING CONDITION TESTS, ABNORMAL OPERATING CONDITION TESTS AND SINGLE FAULT CONDITION TESTS**		P
B.1	**General**		P
B.1.5	Temperature measurement conditions	(See Table B.1.5)	P
B.1.6	Specific output conditions		P

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Clause	Requirement + Test	Result - Remark	Verdict
B.2	**Normal operating conditions**		P
B.2.1	General requirements .....:	(See Test Item Particulars and appended test tables)	P
	Audio Amplifiers and equipment containing an audio amplifiers.....:	(See Annex E)	N/A
B.2.3	Supply voltage and tolerances	+/-10%	P
B.2.5	Input test.....:	(See appended table B.2.5)	P
B.2.6.4	Equipment intended for building-in or rack-mounting		N/A
B.3	**Simulated abnormal operating conditions**		P
B.3.1	General		P
B.3.2	Covering of ventilation openings	(See appended table B.3)	P
	Instructional safeguard.....:	Provided in the manual	P
B.3.3	DC mains polarity test		N/A
B.3.4	Setting of voltage selector		N/A
B.3.5	Maximum load at output terminals	(See appended table B.3)	P
B.3.6	Reverse battery polarity	Impossible	N/A
B.3.7	Audio amplifier abnormal operating conditions	(See Table B.3, B.4)	N/A
B.3.8	Safeguards functional during and after abnormal operating conditions.....:	(See appended table B.3)	P
B.4	**Simulated single fault conditions**		P
B.4.1	General		P
B.4.2	Temperature controlling device		N/A
B.4.3	Blocked motor test		P
B.4.4	Functional insulation		P
B.4.4.1	Short circuit of clearances for functional insulation		P
B.4.4.2	Short circuit of creepage distances for functional insulation		P
B.4.4.3	Short circuit of functional insulation on coated printed boards		N/A
B.4.5	Short-circuit and interruption of electrodes in tubes and semiconductors		P
B.4.6	Short circuit or disconnection of passive components		P
B.4.7	Continuous operation of components		N/A
B.4.8	Compliance criteria during and after single fault conditions .....:	(See appended table B.4)	P
B.4.9	Battery charging and discharging under single fault conditions	(See Annex M)	P

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Clause	Requirement + Test	Result - Remark	Verdict
C	**UV RADIATION**		N/A
C.1	**Protection of materials in equipment from UV radiation**		N/A
C.1.2	Requirements		N/A
C.1.3	Test method and compliance criteria		N/A
C.2	**UV light conditioning test**		N/A
C.2.1	Test apparatus.....:		N/A
C.2.2	Mounting of test samples		N/A
C.2.3	Carbon-arc light-exposure test		N/A
C.2.4	Xenon-arc light-exposure test		N/A
D	**TEST GENERATORS**		N/A
D.1	**Impulse test generators**		N/A
D.2	**Antenna interface test generator**		N/A
D.3	**Electronic pulse generator**		N/A
E	**TEST CONDITIONS FOR EQUIPMENT INTENDED TO AMPLIFY AUDIO SIGNALS**		N/A
E.1	**Electrical energy source classification for audio signals**		N/A
	Maximum non-clipped output power (W) .....:		—
	Rated load impedance (Ω) .....:		—
	Open-circuit output voltage (V).....:		—
	Instructional safeguard.....:		—
E.2	**Audio signals used during test**		N/A
E.2.1	Pink noise test signal		N/A
E.2.2	Sine-wave signal		N/A
E.3	**Operating conditions of equipment containing an audio amplifier**		N/A
E.3.1	Normal operating conditions	(See appended table B.2.5, E.3.1)	N/A
E.3.2	Abnormal operating conditions	(See appended table B.3, B.4)	N/A
E.3.3	Audio equipment temperature measurement conditions……:		N/A
F	**EQUIPMENT MARKINGS, INSTRUCTIONS, AND INSTRUCTIONAL SAFEGUARDS**		P
F.1	**General**		P
	Language .....:	English	—
F.2	**Letter symbols and graphical symbols**		P
F.2.1	Letter symbols according to IEC 60027-1	The Unit of Voltage, Current and frequency used.	P

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Clause	Requirement + Test	Result - Remark	Verdict
F.2.2	Graphic symbols according to IEC, ISO or manufacturer specific		P
F.3	**Equipment markings**		P
F.3.1	Equipment marking locations		P
F.3.2	Equipment identification markings		P
F.3.2.1	Manufacturer identification ..... :	HIKVISION	P
F.3.2.2	Model identification ..... :	See copy of marking plate	P
F.3.3	Equipment rating markings		P
F.3.3.1	Equipment with direct connection to mains		P
F.3.3.2	Equipment without direct connection to mains		N/A
F.3.3.3	Nature of the supply voltage..... :	AC	P
F.3.3.4	Rated voltage ..... :	100V-240V	P
F.3.3.5	Rated frequency ..... :	50/60Hz	P
F.3.3.6	Rated current or rated power ..... :	2,1 A Max	P
F.3.3.7	Equipment with multiple supply connections		N/A
F.3.4	Voltage setting device		N/A
F.3.5	Markings on terminals and operating devices		P
F.3.5.1	Mains appliance outlet and socket-outlet markings :		N/A
F.3.5.2	Switch position identification marking ..... :	Internal approved power supply.	P
F.3.5.3	Replacement fuse identification and rating markings..... :	Internal approved power supply.	P
	Instructional safeguards for neutral fuse..... :		N/A
F.3.5.4	Replacement battery identification marking ..... :	(See Clause M.10)	N/A
F.3.5.5	Neutral conductor terminal		N/A
F.3.5.6	Terminal marking location		P
F.3.6	Equipment markings related to equipment classification		P
F.3.6.1	Class I equipment		P
F.3.6.1.1	Protective earthing conductor terminal ..... :	Certified appliance inlet used.	P
F.3.6.1.2	Protective bonding conductor terminals ..... :	Internal approved power supply.	P
F.3.6.2	Equipment class marking..... :		N/A
F.3.6.3	Functional earthing terminal marking..... :		N/A
F.3.7	Equipment IP rating marking..... :	IPX0 not marked	N/A
F.3.8	External power supply unit output marking ..... :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
F.3.9	Durability, legibility and permanence of markings		P
F.3.10	Test for permanence of markings		P
F.4	**Instructions**		P
	– Information prior to installation and initial use		P
	– Equipment for use in locations where children not likely to be present		P
	– Instructions for installation and interconnection		P
	– Equipment intended for use only in restricted access area		N/A
	– Equipment intended to be fastened in place		N/A
	– Instructions for audio equipment terminals		N/A
	– Protective earthing used as a safeguard		P
	– Protective conductor current exceeding ES2 limits		N/A
	– Graphic symbols used on equipment	See marking plate for detail	P
	– Permanently connected equipment not provided with all-pole mains switch		N/A
	– Replaceable components or modules providing safeguard function		N/A
	– Equipment containing insulating liquid		N/A
	– Installation instructions for outdoor equipment		N/A
F.5	Instructional safeguards		P
G	**COMPONENTS**		P
G.1	**Switches**		P
G.1.1	General	Certification used in power supply	P
G.1.2	Ratings, endurance, spacing, maximum load		P
G.1.3	Test method and compliance criteria		P
G.2	**Relays**		N/A
G.2.1	Requirements and compliance criteria		N/A
G.2.2	Overload test		N/A
G.2.3	Relay controlling connectors supplying power to other equipment		N/A
G.2.4	Test method and compliance criteria		N/A
G.3	**Protective devices**		P
G.3.1	Thermal cut-offs		N/A
	Thermal cut-outs separately approved according to IEC 60730-1 with conditions indicated in a) & b)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Thermal cut-outs tested as part of the equipment as indicated in c)		N/A
G.3.1.2	Test method and compliance criteria		N/A
G.3.2	Thermal links		N/A
G.3.2.1	a) Thermal links tested separately according to IEC 60691 with specifics		N/A
	b) Thermal links tested as part of the equipment		N/A
G.3.2.2	Test method and compliance criteria		N/A
G.3.3	PTC thermistors		P
G.3.4	Overcurrent protection devices	Considered in certified power supplies and part to be provide in building installation	P
G.3.5	Safeguards components not mentioned in G.3.1 to G.3.4		N/A
G.3.5.1	Non-resettable devices suitably rated and marking provided		N/A
G.3.5.2	Single faults conditions .....:	(See appended table B.4)	N/A
G.4	**Connectors**		P
G.4.1	Spacings		P
G.4.2	Mains connectors configuration.....:		P
G.4.3	Plug is shaped that insertion into mains socket-outlets or appliance coupler is unlikely		N/A
G.5	**Wound components**		P
G.5.1	Wire insulation in wound components	Considered in certified power supplies	P
G.5.1.2	Protection against mechanical stress	Considered in certified power supplies	P
G.5.2	Endurance test		N/A
G.5.2.1	General test requirements		N/A
G.5.2.2	Heat run test		N/A
	Test time (days per cycle) .....:		—
	Test temperature (°C) .....:		—
G.5.2.3	Wound components supplied from the mains		N/A
G.5.2.4	Compliance criteria		N/A
G.5.3	Transformers	Considered in certified power supplies.	P
G.5.3.1	General		N/A
	Compliance method .....:		N/A
G.5.3.2	Insulation		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Protection from displacement of windings.....:		—
G.5.3.3	Transformer overload tests		N/A
G.5.3.3.1	Test conditions		N/A
	Position.....:		N/A
	Method of protection .....:		N/A
G.5.3.3.2	Winding temperatures		N/A
G.5.3.3.3	Winding temperatures - alternative test method		N/A
G.5.3.4	Transformers using FIW		N/A
G.5.3.4.1	General		N/A
	FIW wire nominal diameter.....:		—
G.5.3.4.2	Transformers with basic insulation only		N/A
G.5.3.4.3	Transformers with double insulation or reinforced insulation .....:		N/A
G.5.3.4.4	Transformers with FIW wound on metal or ferrite core		N/A
G.5.3.4.5	Thermal cycling test and compliance		N/A
G.5.3.4.6	Partial discharge test		N/A
G.5.4	Motors		P
G.5.4.1	General requirements		P
G.5.4.2	Motor overload test conditions		N/A
G.5.4.3	Running overload test		N/A
G.5.4.4	Locked-rotor overload test		N/A
	Test duration (days) .....:		—
	Electric strength test .....:	(See appended table 5.4.9)	N/A
G.5.4.5	Running overload test for DC motors	locked-rotor is the worst case	N/A
G.5.4.5.2	Tested in the unit		N/A
	Electric strength test .....:	(See appended table 5.4.9)	N/A
G.5.4.5.3	Alternative method		N/A
	Electric strength test .....:	(See appended table 5.4.9)	N/A
G.5.4.6	Locked-rotor overload test for DC motors		P
G.5.4.6.2	Tested in the unit		P
	Maximum Temperature (°C).....:	See appended table B.4	P
	Electric strength test .....:	(See appended table 5.4.9)	N/A
G.5.4.6.3	Alternative method		N/A
	Electric strength test .....:	(See appended table 5.4.9)	N/A
G.5.4.7	Motors with capacitors		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.5.4.8	Three-phase motors		N/A
G.5.4.9	Series motors		N/A
	Operating voltage (V) ..... :		—
G.6	**Wire Insulation**		P
G.6.1	General		P
G.6.2	Enamelled winding wire insulation		N/A
G.7	**Mains power supply cords and interconnection cables**		N/A
G.7.1	General requirements	Not provide supply cords	P
	Type ..... :		—
G.7.2	Cross sectional area (mm^2 or AWG)..... :	10AWG for mains supply cord14AWG for UPS supply cord	P
G.7.3	Cord anchorages and strain relief		N/A
G.7.3.2	Cord strain relief		N/A
G.7.3.2.1	Requirements		N/A
	Strain relief test force (N) ..... :		N/A
G.7.3.2.2	Strain relief mechanism failure		P
G.7.3.2.3	Cord sheath or jacket position, distance (mm) ..... :		N/A
G.7.3.2.4	Strain relief and cord anchorage material		P
G.7.4	Cord Entry		N/A
G.7.5	Non-detachable cord bend protection		N/A
G.7.5.1	Requirements		N/A
G.7.5.2	Test method and compliance criteria		N/A
	Overall diameter or minor overall dimension, *D* (mm)..... :		—
	Radius of curvature after test (mm) ..... :		—
G.7.6	Supply wiring space		N/A
G.7.6.1	General requirements		N/A
G.7.6.2	Stranded wire		N/A
G.7.6.2.1	Requirements		N/A
G.7.6.2.2	Test with 8 mm strand		N/A
G.8	**Varistors**		P
G.8.1	General requirements	Part of certified power supplies.	P
G.8.2	Safeguards against fire		P
G.8.2.1	General		P

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Clause	Requirement + Test	Result - Remark	Verdict
G.8.2.2	Varistor overload test	Metal enclosure	N/A
G.8.2.3	Temporary overvoltage test		N/A
G.9	**Integrated circuit (IC) current limiters**		N/A
G.9.1	Requirements	No such components	N/A
	IC limiter output current (max. 5A)....:		—
	Manufacturers' defined drift ....:		—
G.9.2	Test Program		N/A
G.9.3	Compliance criteria		N/A
G.10	**Resistors**		N/A
G.10.1	General		N/A
G.10.2	Conditioning		N/A
G.10.3	Resistor test		N/A
	Changes of resistance (%)....:		N/A
	Measured current with the lowest resistance value :		N/A
G.10.4	Voltage surge test		N/A
	Changes of resistance (%)....:		N/A
G.10.5	Impulse test		N/A
	Changes of resistance (%)....:		N/A
G.10.6	Overload test		N/A
	Changes of resistance (%)....:		N/A
G.11	**Capacitors and RC units**		P
G.11.1	General requirements	Considered in certified power supplies.	P
G.11.2	Conditioning of capacitors and RC units	Considered in certified power supplies.	P
G.11.3	Rules for selecting capacitors		N/A
G.12	**Optocouplers**		P
	Optocouplers comply with IEC 60747-5-5 with specifics	Considered in certified power supplies.	P
	Type test voltage $V_{ini,a}$ ....:	Min. 4000	—
	Routine test voltage, $V_{ini,b}$ ....:	Min. 4000	—
G.13	**Printed boards**		P
G.13.1	General requirements	See also reports of certified power supplies.	P
G.13.2	Uncoated printed boards		P
G.13.3	Coated printed boards		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.13.4	Insulation between conductors on the same inner surface		N/A
G.13.5	Insulation between conductors on different surfaces		N/A
	Distance through insulation ..... :		N/A
	Number of insulation layers (pcs) ..... :		—
G.13.6	Tests on coated printed boards		N/A
G.13.6.1	Sample preparation and preliminary inspection		N/A
G.13.6.2	Test method and compliance criteria		N/A
G.14	**Coating on components terminals**		N/A
G.14.1	Requirements ..... :	(See Clause G.13)	N/A
G.15	**Pressurized liquid filled components or LFC assemblies**		N/A
G.15.1	Requirements		N/A
G.15.2	Test methods and compliance criteria for self-contained LFC		N/A
G.15.2.1	Hydrostatic pressure test, applied test pressure .... :		N/A
G.15.2.2	Creep resistance test		N/A
G.15.2.3	Tubing and fittings compatibility test, the change of tensile strength (%) ..... :		N/A
G.15.2.4	Vibration test		N/A
G.15.2.5	Thermal cycling test, test temperature (°C)..... :		N/A
G.15.2.6	Force test		N/A
G.15.2.7	Compliance criteria		N/A
G.15.3	Test methods and compliance for a modular LFC		N/A
G.15.3.2	Hydrostatic pressure test, applied test pressure .... :		N/A
G.15.3.3	Creep resistance test		N/A
G.15.3.4	Tubing and fittings compatibility test, the change of tensile strength (%) ..... :		N/A
G.15.3.5	Thermal cycle test, test temperature (°C) ..... :		N/A
G.15.3.6	Force test		N/A
G.15.3.7	Compliance criteria		N/A
G.16	**IC including capacitor discharge function (ICX)**		N/A
G.16.1	Condition for fault tested is not required	No such part	N/A
	ICX with associated circuitry tested in equipment		N/A
	ICX tested separately		N/A
G.16.2	Tests		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Smallest capacitance and smallest resistance specified by ICX manufacturer for impulse test.....:		—
	Mains voltage that impulses to be superimposed on.....:		—
	Largest capacitance and smallest resistance for ICX tested by itself for 10000 cycles test.....:		—
G.16.3	Capacitor discharge test .....:	(See appended table 5.5.2.2)	N/A
H	**CRITERIA FOR TELEPHONE RINGING SIGNALS**		N/A
H.1	**General**		N/A
H.2	**Method A**		N/A
H.3	**Method B**		N/A
H.3.1	Ringing signal		N/A
H.3.1.1	Frequency (Hz) .....:		—
H.3.1.2	Voltage (V) .....:		—
H.3.1.3	Cadence; time (s) and voltage (V) .....:		—
H.3.1.4	Single fault condition current (mA):.....:		—
H.3.2	Tripping device and monitoring voltage		N/A
H.3.2.1	Conditions for use of a tripping device or a monitoring voltage		N/A
H.3.2.2	Tripping device		N/A
H.3.2.3	Monitoring voltage (V).....:		N/A
J	**INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION**		N/A
J.1	**General**		N/A
	Winding wire insulation .....:		—
	Solid round winding wire, diameter (mm).....:		N/A
	Solid square and rectangular (flatwise bending) winding wire, cross-sectional area (mm^2) .....:		N/A
J.2/J.3	Tests and Manufacturing	(See separate test report)	—
K	**SAFETY INTERLOCKS**		N/A
K.1	**General requirements**		N/A
	Instructional safeguard.....:		N/A
K.2	**Components of safety interlock safeguard mechanism**		N/A
K.3	**Inadvertent change of operating mode**		N/A
K.4	**Interlock safeguard override**		N/A
K.5	**Fail-safe**		N/A
K.5.1	Under single fault condition		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
K.6	**Mechanically operated safety interlocks**		N/A
K.6.1	Endurance requirement		N/A
K.7	**Interlock circuit isolation**		N/A
K.7.1	Separation distance for contact gaps & interlock circuit elements		N/A
	In circuit connected to mains, separation distance for contact gaps (mm) ..... :		N/A
	In circuit isolated from mains, separation distance for contact gaps (mm) ..... :		N/A
	Electric strength test before and after the test of K.7.2..... :	(See appended table 5.4.9)	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
L	**DISCONNECT DEVICES**		P
L.1	**General requirements**	AC inlet as disconnect devices	P
L.2	**Permanently connected equipment**		N/A
	Instructions for permanently connected equipment		N/A
L.3	**Parts that remain energized**		P
L.4	**Single-phase equipment**		P
	Instructions for single pole disconnect device		N/A
L.5	**Three-phase equipment**		N/A
L.6	**Switches as disconnect devices**		N/A
L.7	**Plugs as disconnect devices**		N/A
	Instructions for pluggable equipment		—
L.8	**Multiple power sources**		N/A
	Instructional safeguard..... :		N/A
M	**EQUIPMENT CONTAINING BATTERIES AND THEIR PROTECTION CIRCUITS**		P
M.1	**General requirements**		P
M.2	**Safety of batteries and their cells**		P
M.2.1	Batteries and their cells comply with relevant IEC standards..... :	See table 4.1.2	P
M.3	**Protection circuits for batteries provided within the equipment**		P
M.3.1	Requirements		P
M.3.2	Test method		P
	Overcharging of a rechargeable battery		N/A
	Excessive discharging		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Unintentional charging of a non-rechargeable battery		P
	Reverse charging of a rechargeable battery		N/A
M.3.3	Compliance criteria	(See appended table M.3)	P
M.4	**Additional safeguards for equipment containing a secondary lithium battery**		N/A
M.4.1	General	The battery is not rechargeable.	N/A
	IEC 62133-2 batteries used for sub-system power powering application .....:		N/A
M.4.2	Charging safeguards		N/A
M.4.2.1	Requirements		N/A
M.4.2.2	Test		N/A
M.4.2.2.1	General		N/A
M.4.2.2.2	Abnormal operating conditions		N/A
M.4.2.2.3	Single fault conditions		N/A
M.4.2.3	Compliance criteria .....:	(See appended table M.4.2)	N/A
M.4.3	Fire enclosure.....:		N/A
M.4.4	Drop test of equipment containing a secondary lithium battery		N/A
M.4.4.2	Preparation and procedure for the drop test		N/A
M.4.4.3	Drop, Voltage on reference and dropped batteries (V); voltage difference during 24 h period (%): .....:		N/A
M.4.4.4	Check of the charge/discharge function		N/A
M.4.4.5	Charge / discharge cycle test		N/A
M.4.4.6	Compliance criteria		N/A
M.5	**Risk of burn due to short-circuit during carrying**		N/A
M.5.1	Requirement		N/A
M.5.2	Test method and compliance criteria		N/A
M.6	**Safeguards against short-circuits**		P
M.6.1	External and internal faults	Certified coin battery	P
M.6.2	Compliance criteria		P
M.7	**Risk of explosion from lead acid and NiCd batteries**		N/A
M.7.1	Ventilation preventing explosive gas concentration		N/A
	Calculated hydrogen generation rate.....:		N/A
M.7.2	Test method and compliance criteria		N/A
	Minimum air flow rate, Q (m^3/h).....:		N/A
M.7.3	Ventilation tests		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
M.7.3.1	General		N/A
M.7.3.2	Ventilation test – alternative 1		N/A
	Hydrogen gas concentration (%) ..... :		N/A
M.7.3.3	Ventilation test – alternative 2		N/A
	Obtained hydrogen generation rate ..... :		N/A
M.7.3.4	Ventilation test – alternative 3		N/A
	Hydrogen gas concentration (%) ..... :		N/A
M.7.4	Marking..... :		N/A
M.8	**Protection against internal ignition from external spark sources of rechargeable batteries with aqueous electrolyte**		N/A
M.8.1	General		N/A
M.8.2	Test method		N/A
M.8.2.1	General		N/A
M.8.2.2	Estimation of hypothetical volume V_Z (m^3/s) ..... :		—
M.8.2.3	Correction factors ..... :		—
M.8.2.4	Calculation of distance *d* (mm) ..... :		—
M.9	**Preventing electrolyte spillage**		N/A
M.9.1	Protection from electrolyte spillage		N/A
M.9.2	Tray for preventing electrolyte spillage		N/A
M.10	**Instructions to prevent reasonably foreseeable misuse**		P
	Instructional safeguard..... :		P
N	**ELECTROCHEMICAL POTENTIALS**		P
	Material(s) used ..... :		—
O	**MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES**		P
	Value of *X* (mm)..... :	1mm	—
P	**SAFEGUARDS AGAINST CONDUCTIVE OBJECTS**		P
P.1	**General**		P
P.2	**Safeguards against entry or consequences of entry of a foreign object**		P
P.2.1	General		P
	Location and Dimensions (mm) ..... :	Top: No opening; Left/right side: Numerous hexagons with maximum dimension 4mm. No hazard parts located in 5° vertical projection.	—
P.2.2	Safeguard requirements		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	The ES3 and PS3 keep-out volume in Figure P.4 not applicable to transportable equipment		N/A
	Transportable equipment with metalized plastic parts ..... :		N/A
P.2.3	Consequence of entry test ..... :		N/A
P.3	**Safeguards against spillage of internal liquids**		N/A
P.3.1	General		N/A
P.3.2	Determination of spillage consequences		N/A
P.3.3	Spillage safeguards		N/A
P.3.4	Compliance criteria		N/A
P.4	**Metallized coatings and adhesives securing parts**		N/A
P.4.1	General		N/A
P.4.2	Tests		N/A
	Conditioning, T_C (°C)..... :		—
	Duration (weeks)..... :		—
Q	**CIRCUITS INTENDED FOR INTERCONNECTION WITH BUILDING WIRING**		P
Q.1	**Limited power sources**		P
Q.1.1	Requirements		P
	a) Inherently limited output		N/A
	b) Impedance limited output	All output ports were protected by PTC	P
	c) Regulating network limited output		N/A
	d) Overcurrent protective device limited output		N/A
	e) IC current limiter complying with G.9		N/A
Q.1.2	Test method and compliance criteria..... :	(See appended table Q.1)	P
	Current rating of overcurrent protective device (A) :		N/A
Q.2	**Test for external circuits – paired conductor cable**		N/A
	Maximum output current (A) ..... :		N/A
	Current limiting method..... :		—
R	**LIMITED SHORT CIRCUIT TEST**		N/A
R.1	**General**		N/A
R.2	**Test setup**		N/A
	Overcurrent protective device for test..... :		—
R.3	**Test method**		N/A
	Cord/cable used for test..... :		—
R.4	**Compliance criteria**		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
S	**TESTS FOR RESISTANCE TO HEAT AND FIRE**		N/A
S.1	**Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W**		N/A
	Samples, material ..... :		—
	Wall thickness (mm)..... :		—
	Conditioning (°C) ..... :		—
	Test flame according to IEC 60695-11-5 with conditions as set out		N/A
	- Material not consumed completely		N/A
	- Material extinguishes within 30s		N/A
	- No burning of layer or wrapping tissue		N/A
S.2	**Flammability test for fire enclosure and fire barrier integrity**		N/A
	Samples, material ..... :		—
	Wall thickness (mm)..... :		—
	Conditioning (°C) ..... :		—
	- Material did not show any additional holes for combustible materials		N/A
	- Cheesecloth did not ignite for top openings		N/A
S.3	**Flammability test for the bottom of a fire enclosure**		N/A
S.3.1	Mounting of samples		N/A
S.3.2	Test method and compliance criteria		N/A
	Mounting of samples ..... :		—
	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 4 000 W**		N/A
	Samples, material ..... :		—
	Wall thickness (mm)..... :		—
	Conditioning (°C) ..... :		—
S.6	**Grille covering material, cloth, and reticulated foam**		N/A
	Samples, material ..... :		—
	Measured distance from the centre of the fuel tablet (mm)……..:		N/A
T	**MECHANICAL STRENGTH TESTS**		P
T.1	**General**		P

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Clause	Requirement + Test	Result - Remark	Verdict
T.2	**Steady force test, 10 N .....:**	(See appended table T.2)	P
T.3	**Steady force test, 30 N .....:**	(See appended table T.2, T.3, T.4, T.5)	N/A
T.4	**Steady force test, 100 N .....:**	(See appended table T.2, T.3, T.4, T.5)	N/A
T.5	**Steady force test, 250 N .....:**	(See appended table T.5)	P
T.6	**Enclosure impact test**	(See appended table T.6)	P
	Fall test		P
	Swing test		N/A
T.7	**Drop test .....:**	(See appended table T.7)	N/A
T.8	**Stress relief test.....:**	(See appended table T.8)	P
T.9	**Glass Impact Test.....:**	(See appended table T.6, T.9)	N/A
T.10	**Glass fragmentation test**		N/A
	Number of particles counted .....:		N/A
T.11	**Test for telescoping or rod antennas**		N/A
	Torque value (Nm) .....:		N/A
U	**MECHANICAL STRENGTH OF CATHODE RAY TUBES (CRT) AND PROTECTION AGAINST THE EFFECTS OF IMPLOSION**		N/A
U.1	**General**		N/A
	Instructional safeguard**.....:**		N/A
U.2	**Test method and compliance for non-intrinsically protected CRTs**		N/A
U.3	**Protective screen**		N/A
V	**DETERMINATION OF ACCESSIBLE PARTS**		P
V.1	**Accessible parts of equipment**		P
V.1.1	General	Not accessible without tool	P
V.1.2	Surfaces and openings tested with jointed test probes		P
V.1.3	Openings tested with straight unjointed test probes		P
V.1.4	Plugs, jacks, connectors tested with blunt probe	No such plugs, jacks, connectors	N/A
V.1.5	Slot openings tested with wedge probe		N/A
V.1.6	Terminals tested with rigid test wire		P
V.2	**Accessible part criterion**		P
X	**ALTERNATIVE METHOD FOR DETERMINING CLEARANCES FOR INSULATION IN CIRCUITS CONNECTED TO AN AC MAINS NOT EXCEEDING 420 V PEAK (300 V RMS)**		N/A
	Clearance .....:	(See appended table X)	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
Y	**CONSTRUCTION REQUIREMENTS FOR OUTDOOR ENCLOSURES**		N/A
Y.1	**General**		N/A
Y.2	**Resistance to UV radiation**		N/A
Y.3	**Resistance to corrosion**		N/A
Y.3.1	Metallic parts of outdoor enclosures are resistant to effects of water-borne contaminants by.....:		N/A
Y.3.2	Test apparatus		N/A
Y.3.3	Water – saturated sulphur dioxide atmosphere		N/A
Y.3.4	Test procedure.....:		N/A
Y.3.5	Compliance criteria		N/A
Y.4	**Gaskets**		N/A
Y.4.1	General		N/A
Y.4.2	Gasket tests		N/A
Y.4.3	Tensile strength and elongation tests, changes of tensile strength and elongation.....:		N/A
	Alternative test methods.....:		N/A
Y.4.4	Compression test		N/A
Y.4.5	Oil resistance, change of swell / shrink (%).....:		N/A
Y.4.6	Securing means	(See Annex P.4)	N/A
Y.5	**Protection of equipment within an outdoor enclosure**		N/A
Y.5.1	General		N/A
Y.5.2	Protection from moisture		N/A
	Relevant tests of IEC 60529 or Y.5.3.....:		N/A
Y.5.3	Water spray test		N/A
Y.5.4	Protection from plants and vermin		N/A
Y.5.5	Protection from excessive dust		N/A
Y.5.5.1	General		N/A
	Relevant tests of IEC 60529 or Y.5.5.2 or Y.5.5.3..:		N/A
Y.5.5.2	IP5X equipment		N/A
Y.5.5.3	IP6X equipment		N/A
Y.6	**Mechanical strength of enclosures**		N/A
Y.6.1	General		N/A
Y.6.2	Impact test.....:	(See Table T.6)	N/A

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Clause	Requirement + Test	Result - Remark	Verdict

5.2	TABLE: Classification of electrical energy sources						P
Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters				ES Class
			U (V)	I (mA)	Type[1)]	Additional Info [2)]	
Supplementary information:							
1) Type: Steady state (SS), Capacitance (CP), Single pulse (SP), Repetitive pulses (RP), etc. 2) Additional Info: Frequency, Pulse duration, Pulse off time, Capacitance value, etc. Output of internal power supply is ES1 and there is no boost circuit inside after power supply.							

5.4.1.8	TABLE: Working voltage measurement			
Location	RMS voltage (V)	Peak voltage (V)	Frequency (Hz)	Comments
--	--	--	--	--
--	--	--	--	--
Supplementary information:				
Refer to Internal approved power supply.				

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

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

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Clause	Requirement + Test	Result - Remark	Verdict

Refer to Internal approved power supply.

5.4.2, 5.4.3	TABLE: Minimum Clearances/Creepage distance							P
Clearance (cl) and creepage distance (cr) at/of/between:	U_p (V)	U_{rms} (V)	Freq [1] (Hz)	Required cl (mm)	cl (mm)	E.S. [2] (V)	Required cr (mm)	cr (mm)
Functional:								
--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--
Basic/supplementary:								
--	--	--	--	--	--	--	--	--
Supplementary information:								
1) Only for frequency above 30 kHz 2) EUT with fully wrapped built-in certified power supply, without exposed primary circuit.								

5.4.4.2	TABLE: Minimum distance through insulation			P
Distance through insulation (DTI) at/of	Peak voltage (V)	Insulation	Required DTI (mm)	Measured DTI (mm)
--	--	--	--	--
Supplementary information:				
Refer to Internal approved power supply.				

5.4.9	TABLE: Electric strength tests		P
Test voltage applied between:	Voltage shape (Surge, Impulse, AC, DC, etc.)	Test voltage (V)	Breakdown Yes / No
L/N to protective earth (metal enclosure)	DC	2500	No
L/N to output terminal	DC	4000	No
L/N to non-metal enclosure	DC	4000	No
Supplementary information:			
All models have the same test result.			

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

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Clause	Requirement + Test	Result - Remark	Verdict

--	--	--	--	--	--
Supplementary information:					
The power supplies are certified separately. X-capacitors installed for testing: [ ] bleeding resistor rating: [ ] ICX: 1) Normal operating condition (e.g., normal operation, or open fuse), SC= short circuit, OC= open circuit					

5.6.6	**TABLE: Resistance of protective conductors and terminations**			P
Location	Test current (A)	Duration (min)	Voltage drop (V)	Resistance (Ω)
Test with Building-in power supply model name: HK250-48PP				
Metal enclosure	32	2	0,360	0,009
Metal enclosure	40	2	0,224	0,007
Test with Building-in power supply model name: SFXA1151A				
Metal enclosure	32	2	0,256	0,008
Metal enclosure	40	2	0,360	0,009
Test with Building-in power supply model name: U1A-G10150-S-A1				
Metal enclosure	32	2	0,224	0,007
Metal enclosure	40	2	0,360	0,009
Test with Building-in power supply model name: DPS-150AB-24 A				
Metal enclosure	32	2	0,384	0,012
Metal enclosure	40	2	0,56	0,014
Supplementary information:				

5.7.4	**TABLE: Unearthed accessible parts**			P
Location	Operating and fault conditions	Supply Voltage (V)	Parameters	ES class
			Voltage (V_{rms} or V_{pk}) / Current (A_{rms} or A_{pk}) / Freq. (Hz)	
Plastic enclosure to earth (Test with Building-in power supply model name: HK250-48PP)	Normal	264	-- / 0,056mArms / --	ES1
Plastic enclosure to earth (Test with Building-in	Normal	264	-- / 0,056mArms / --	ES1

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Clause	Requirement + Test	Result - Remark	Verdict

power supply model name: SFXA1151A)						
Plastic enclosure to earth (Test with Building-in power supply model name: U1A-G10150-S-A1)	Normal	264	--	0,056mArms	--	ES1
Terminal ports Test with Building-in power supply model name: DPS-150AB-24 A.	Normal	264	--	0,004mApk	--	ES1
Supplementary information:						

5.7.5	**TABLE: Earthed accessible conductive part**			P
Supply voltage (V) ..... :	264V / 60Hz			—
Phase(s) ..... :	[X] Single Phase; [ ] Three Phase: [ ] Delta [ ] Wye			—
Power Distribution System ..... :	[X] TN [X]TT [ ] IT			—
Location	Fault Condition No in IEC 60990 clause 6.2.2	Touch current (mA)	Comment	
L/N to metal enclosure (Test with Building-in power supply model name: HK250-48PP)	--	0,908	--	
L/N to metal enclosure (Test with Building-in power supply model name: SFXA1151A)	--	0,67	--	
L/N to metal enclosure (Test with Building-in power supply model name: U1A-G10150-S-A1)	--	0,816	--	
L/N to metal enclosure Test with Building-in power supply model name: DPS-150AB-24 A.	--	0,8	--	
Supplementary Information:				

5.8	**TABLE: Backfeed safeguard in battery backed up supplies**					N/A
Location	Supply	Operating and fault	Time (s)	Open-circuit	Touch	ES Class

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Clause	Requirement + Test	Result - Remark	Verdict

	voltage (V)	condition		voltage (V)	current (A)	
--	--	--	--	--	--	--
Supplementary information:						
Abbreviation: SC= short circuit, OC= open circuit						

6.2.2	**TABLE: Power source circuit classifications**					P
Location	Operating and fault condition	Voltage (V)	Current (A)	Max. Power[1)] (W)	Time (S)	PS class
All the internal circuits	Normal	--	--	--	--	PS3 without testing
USB board input 5 V d. c.	Normal	5,02	2,00	8,31	3	PS1
Indicator light board input 5 V d. c.	Normal	4,98	0,91	4,32	3	PS1
Front USB 2.0 port (up)	Normal	5,02	2,00	8,31	3	PS1
Front USB 2.0 port (down)	Normal	5,02	2,00	8,28	3	PS1
Rear USB 3.0 port	Normal	5,03	1,40	6,66	3	PS1
DC 12 V	Normal	11,94	2,90	32,12	5	PS2
Ctrl 12 V	Normal	11,94	1,00	11,52	3	PS1
HDMI port	Normal	5,02	0	0	3	PS1
VGA port	Normal	0	0	0	3	PS1
LAN port	Normal	0	0	0	3	PS1
Alarm port	Normal	0	0	0	3	PS1
Audio port	Normal	0	0	0	3	PS1
Supplementary information:						
1) Measured after 3 s for PS1 and measured after 5 s for PS2 and PS3.						

6.2.3.1	**TABLE: Determination of Arcing PIS**			P
Location	Open circuit voltage after 3 s (Vpk)	Measured r.m.s current (A)	Calculated value	Arcing PIS? Yes / No
All primary circuits	--	--	--	Yes
Supplementary information:				
All primary circuits are considered as Arcing PIS without test.				

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Clause	Requirement + Test	Result - Remark	Verdict

6.2.3.2	**TABLE: Determination of resistive PIS**		P
Location	Operating and fault condition	Dissipate power (W)	Arcing PIS? Yes / No
All internal circuits	--	--	--
Supplementary information:			
Abbreviation: SC= short circuit; OC= open circuit All internal circuits are considered as Resistive PIS without test.			

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

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Clause	Requirement + Test	Result - Remark	Verdict

9.6	**TABLE: Temperature measurements for wireless power transmitters**		
Supply voltage (V)..... :			—
Max. transmitting power (W)..... :			—

Part A [1)]

Foreign objects	w/o receiver and direct contact		with receiver and direct contact		with receiver and at distance of 2 mm		with receiver and at distance of 5 mm	
	Object (°C)	Ambient (°C)	Object (°C)	Ambient (°C)	Object (°C)	Ambient (°C)	Object (°C)	Ambient (°C)
Steel disc								
Aluminium ring								
Aluminium foil								
Measurement temperature T of part/at:	w/o receiver and direct contact		with receiver and direct contact		with receiver and at distance of 2 mm		with receiver and at distance of 5 mm	
	T (°C)	Ambient (°C)	T (°C)	Ambient (°C)	T (°C)	Ambient (°C)	T (°C)	Ambient (°C)

Part B [2)]

Foreign objects	w/o receiver and direct contact		with receiver and direct contact		with receiver and at distance of 2 mm		with receiver and at distance of 5 mm	
	Object (°C)	Ambient (°C)	Object (°C)	Ambient (°C)	Object (°C)	Ambient (°C)	Object (°C)	Ambient (°C)
Steel disc								
Aluminium ring								
Aluminium foil								
Measurement temperature T of part/at:	w/o receiver and direct contact		with receiver and direct contact		with receiver and at distance of 2 mm		with receiver and at distance of 5 mm	
	T (°C)	Ambient (°C)	T (°C)	Ambient (°C)	T (°C)	Ambient (°C)	T (°C)	Ambient (°C)

Supplementary information:

1) The test is performed by powering up the transmitter and then placing each of the foreign objects specified in 9.6.2 in direct contact with the transmitter.

2) The test is performed by first placing each of the foreign objects specified in 9.6.2 in direct contact with the transmitter and then powering up transmitter.

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Clause	Requirement + Test	Result - Remark	Verdict

5.4.1.4, 9.3, B.1.5, B.2.6	**TABLE: Temperature measurements**		P
Supply voltage (V).....	90VAC/60Hz	264VAC/50Hz	—
Ambient temperature during test T_{amb} (°C) ..	22,1	22,3	—
Maximum measured temperature *T* of part/at:	*T* (°C)		Allowed T_{max} (°C)
Building-in power supply: U1A-G10150-S-A1			
RTC Battery	63,6	63,4	Ref.
PCB near U1(80477_P V1.1)	74,2	74,2	130
PCB near URL4(8452 V1.2)	60,9	60,8	130
PCB near LED30(81184 V2.0)	56,7	56,9	130
PCB near JP3 (81185 V2.0)	67,7	71,7	130
X-capacitor-CXA	63,8	63,5	100
AC Intel	62,8	61,9	70
Input wire	66,6	63,6	80
PE wire	64,2	63,0	105
CON101	66,9	66,5	70
MOV101	68,4	68,3	85
Line chock of LF101	75,0	72,5	130
CX102	71,4	72,0	100
CY101	70,3	67,3	125
Line chock of LF102	72,4	66,2	130
PCB under BD101	77,0	68,9	130
L102 winding	92,8	72,8	130
C101	66,8	63,1	100
PCB under Q114	72,2	69,1	130
PCB under Q113	78,4	71,3	130
PCB under Q112	66,3	65,3	130
T101 winding	68,7	68,8	110
T101 core	69,5	69,6	110
U103 body	73,5	71,3	100
U105 body	73,6	72,1	100
PCB under D201	76,1	77,8	130
L201 winding	71,0	71,8	130

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Clause	Requirement + Test	Result - Remark	Verdict

C213			66,7		66,9		105
Output wire			64,8		64,9		80
Enclosure plastic (inside)			57,7		59,1		60
Enclosure plastic (outside)*			26,1		27,1		77
Switch*			30,9		30,1		77
Metal enclosure*			34,0		33,6		70
Temperature T of winding:	t_1 (°C)	R_1 (Ω)	t_2 (°C)	R_2 (Ω)	T (°C)	Allowed T_{max} (°C)	Insulation class
Supplementary information:							
* The test results of touchable surface temperature were considered base on ambient temperature 25°C. Other measured temperature point list in this table has calculated to Tma (55°C). The limited value of power supply unit temperature refers to the power supply test report.							

5.4.1.4, 9.3, B.1.5, B.2.6	**TABLE: Temperature measurements**			P
Supply voltage (V) .....:		90VAC/60Hz	264VAC/50Hz	—
Ambient temperature during test T_{amb} (°C).....:		21,5	20,1	—
Maximum measured temperature *T* of part/at:		*T* (°C)		Allowed T_{max} (°C)
Building-in power supply: HK250-48PP				
AC inlet		65,5	63,9	70
AC wire		67,3	65,1	80
CY1 body		68,4	65,0	125
MOV1 body		67,0	66,3	85
CX1 body		74,4	67,4	100
LF1 coil		74,8	66,7	130
CX2 body		71,9	66,3	100
LF2 coil		80,3	68,3	130
PCB under BD1		71,1	64,7	105
CY4 body		69,6	65,4	125
L1 coil		80,0	70,1	130
C2 body		71,7	67,9	105
PCB under Q1		75,7	70,0	130
PCB under D2		68,0	66,2	130

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Clause	Requirement + Test	Result - Remark	Verdict

PCB under Q4			67,9		67,1		130
T1 coil			80,5		80,1		110
T1 core			74,8		73,7		110
IC604 body			64,3		63,5		100
Mylar sheet inside near T1			64,1		63,0		105
I/O body			58,9		59,7		65
DC wire (+12V)			66,0		65,0		80
RTC battery			65,0		64,1		Ref.
PCB near U1			77,6		76,2		130
PCB near URL4			62,9		62,0		130
PCB near LED30			71,6		70,6		130
PCB near JP3			63,9		62,5		130
Plastic internal enclosure			59,0		58,8		60
Plastic external enclosure*			31,0		30,1		77
Metal enclosure*			36,2		35,1		70
Temperature T of winding:	t_1 (°C)	R_1 (Ω)	t_2 (°C)	R_2 (Ω)	T (°C)	Allowed T_{max} (°C)	Insulation class
Supplementary information:							
* The test results of touchable surface temperature were considered base on ambient temperature 25°C. Other measured temperature point list in this table has calculated to Tma (55°C). The limited value of power supply unit temperature refers to the power supply test report.							

5.4.1.4, 9.3, B.1.5, B.2.6	**TABLE: Temperature measurements**		P
Supply voltage (V) .....:	90VAC/60Hz	264VAC/50Hz	—
Ambient temperature during test T_{amb} (°C).....:	23,8	24,7	—
Maximum measured temperature *T* of part/at:	*T* (°C)		Allowed T_{max} (°C)
Building-in power supply: SFXA1151A			
RTC Battery	62,9	61,9	Ref.
PCB near U1 (80477_P V1.1)	74,4	73,3	130
PCB near URL4 (8452 V1.2)	60,2	59,0	130
PCB near LED30 (81184 V2.0)	57,6	56,6	130
PCB near JP3 (81185 V2.0)	67,3	66,6	130

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Clause	Requirement + Test	Result - Remark	Verdict

MOV1 Body	58,8	59,3	85
C2(Y)	61,7	60,5	125
T1 coil	62,9	65,9	110
T1 core	58,6	62,6	110
AC Inlet inside	67,1	57,0	70
CN1	63,8	59,2	70
M4 Body	61,4	61,9	100
M5 Body	64,4	61,7	100
Input wire(L)	64,3	59,5	80
PCB under HS1(Q31)	62,0	61,4	130
PCB under BD	66,7	61,9	130
Output wire(+)	69,2	63,0	80
SW1 (inside)	64,0	58,3	85
C4(X)	62,7	59,8	100
C5(X)	66,0	60,8	100
C47(Y)	63,0	62,0	125
C1(Y)	63,1	59,8	125
SW1 (outside)*	26,9	25,9	77
PCB under Q11	72,4	66,9	130
PCB under RT1	80,2	67,3	130
C6 (Bulk)	70,2	64,5	105
LC1 coil	65,6	60,2	110
L3 coil	69,3	62,1	110
L3 core	71,5	63,6	110
Enclosure Plastic (inside)	58,9	58,1	60
Enclosure Plastic (outside)*	27,1	26,1	77
Metal Enclosure*	33,0	31,7	70

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

Supplementary information:

* The test results of touchable surface temperature were considered base on ambient temperature 25°C.
Other measured temperature point list in this table has calculated to Tma (55°C).
The limited value of power supply unit temperature refers to the power supply test report.

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Clause	Requirement + Test	Result - Remark	Verdict

5.4.1.4, 9.3, B.1.5, B.2.6	**TABLE: Temperature measurements**		P
Supply voltage (V) .....:	90VAC/50Hz	264VAC/50Hz	—
Ambient temperature during test T_{amb} (°C).....:	24,8	24,8	—
Maximum measured temperature *T* of part/at:	*T* (°C)		Allowed T_{max} (°C)
Model DS-9664NI-M8 with building-in power supply: DPS-150AB-24 A			
Line pin of AC Inlet	65,5	63,0	70
Power Switch body	66,7	63,8	85
CN1 body	68,2	65,2	85
Z1 body	87,8	70,6	85
PWB near BD1	74,2	70,4	130
PWB near Q801	72,3	65,7	130
T501 coil	78,1	78,0	110
T501 core	77,2	76,0	110
IC552	72,6	69,7	100
PCB near U9 (9340HC_P)	58,9	59,3	130
PCB near U1 (DS-80505)	71,0	70,9	130
RTC battery	62,2	62,2	Ref
Metal enclosure*	29,9	29,3	70
Plastic external enclosure*	28,8	28,1	77

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

Supplementary information:

* The test results of touchable surface temperature were considered base on ambient temperature 25°C.
Other measured temperature point list in this table has calculated to Tma (55°C).
The limited value of power supply unit temperature refers to the power supply test report.

B.2.5	**TABLE: Input test**							P
U (V)	Hz	I (A)	I rated (A)	P (W)	P rated (W)	Fuse No	I fuse (A)	Condition/status
Test with Building-in power supply model name: HK250-48PP								
90	50	1,37	--	122,22	--	F1,F2	1,37	Maximum normal load. USB 2.0 load 0,5A,
90	60	1,35	--	120,57	--	F1,F2	1,35	

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Clause	Requirement + Test	Result - Remark	Verdict

100	50	1,24	2,10	121,58	--	F1,F2	1,24	USB 3.0 load 0,9A, DC12V load 1A, Ctrl 12V load 1A.
100	60	1,21	2,10	120,24	--	F1,F2	1,21	
240	50	0,52	2,10	117,98	--	F1,F2	0,52	
240	60	0,52	2,10	117,65	--	F1,F2	0,52	
264	50	0,48	--	117,67	--	F1,F2	0,48	
264	60	0,48	--	118,66	--	F1,F2	0,48	
Test with Building-in power supply model name: SFXA1151A								
90	50	1,37	--	123,35	--	F1	1,37	Maximum normal load. USB 2.0 load 0,5A, USB 3.0 load 0,9A, DC12V load 1A, Ctrl 12V load 1A.
90	60	1,37	--	123,41	--	F1	1,37	
100	50	1,22	2,10	121,45	--	F1	1,22	
100	60	1,22	2,10	121,70	--	F1	1,22	
240	50	0,52	2,10	116,99	--	F1	0,52	
240	60	0,53	2,10	117,80	--	F1	0,53	
264	50	0,47	--	116,99	--	F1	0,47	
264	60	0,48	--	116,65	--	F1	0,48	
Test with Building-in power supply model name: U1A-G10150-S-A1								
90	50	1,44	--	128,56	--	F1	1,44	Maximum normal load. USB 2.0 load 0,5A, USB 3.0 load 0,9A, DC12V load 1A, Ctrl 12V load 1A.
90	60	1,45	--	132,60	--	F1	1,45	
100	50	1,28	2,10	127,89	--	F1	1,28	
100	60	1,31	2,10	131,43	--	F1	1,31	
240	50	0,54	2,10	123,43	--	F1	0,54	
240	60	0,56	2,10	126,80	--	F1	0,56	
264	50	0,52	--	123,20	--	F1	0,52	
264	60	0,52	--	126,27	--	F1	0,52	
Supplementary information:								
Equipment may be have rated current or rated power or both. Both should be measured								

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
Model DS-9664NI-M8 Test with Building-in power supply model name: SFXA1151A								
90	50	1,12	--	101,76	--	F1	1,12	Maximum normal load: 8*8T HDD, USB 2.0 load 0,5A*2, USB 3.0 load 0,9A*2, DC12V load 0,9A,
90	60	1,13	--	101,25	--	F1	1,13	
100	50	1,01	2,10	101,43	--	F1	1,01	
100	60	0,99	2,10	98,64	--	F1	0,99	

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Clause	Requirement + Test	Result - Remark	Verdict

240	50	0,42	2,10	99,66	--	F1	0,42	Ctrl 12V load 0,9A
240	60	0,42	2,10	96,43	--	F1	0,42	
264	50	0,41	--	97,18	--	F1	0,41	
264	60	0,38	--	96,37	--	F1	0,38	
Supplementary information:								
Equipment may be have rated current or rated power or both. Both should be measured								

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
Model iDS-9664NXI-M8/X test with Building-in power supply model name: DPS-150AB-24 A and alternative main board								
90	50	1,11	--	99,03	--	F1	1,11	Max normal condition, 8*8T HDD, DC 12V load 0,9A; Ctrl 12V load 0,5A; USB load 0,1A
90	60	1,12	--	100,23	--	F1	1,12	
100	50	1,01	2,10	98,78	--	F1	1,01	
100	60	1,00	2,10	98,42	--	F1	1,00	
240	50	0,42	2,10	97,75	--	F1	0,42	
240	60	0,42	2,10	96,21	--	F1	0,42	
264	50	0,40	--	96,71	--	F1	0,40	
264	60	0,38	--	96,23	--	F1	0,38	
Supplementary information:								
Equipment may be have rated current or rated power or both. Both should be measured								

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Clause	Requirement + Test	Result - Remark	Verdict

B.2.5, E.3.1	**TABLE: Input test for equipment containing audio amplifiers**											N/A
Operation Condition:	Signal type	Frequency (Hz)	Output loads (Ω)	Load setup								
A1	Sine wave input	1000		All channels driven, (maximum) non-clipped output power								
A2	Peak response frequency			All channels driven, (maximum) non-clipped output power								
B1	Sine wave input	1000		All channels driven, 1/8 non-clipped output power								
B2	Peak response frequency			All channels driven, 1/8 non-clipped output power								
C	Band-limited pink noise signal	N/A		All channels driven, 1/8 non-clipped output power								
D												
Input									Amplifier Output			
Cond.	U (V)	Hz	I (A)	I rated (A)	P (W)	P rated (W)	Fuse No	I fuse (A)	Ch.	U (V)	P (W)	Load (Ω)
Supplementary information:												

B.3, B.4	**TABLE: Abnormal operating and fault condition tests**						**P**
Ambient temperature T_{amb} (°C) .....:					See below		—
Power source for EUT: Manufacturer, model/type, outputrating...:					See table 4.1.2		—
Component No.	Condition	Supply voltage (V)	Test time	Fuse no.	Fuse current (A)	Observation	
Test with Building-in power supply model name: HK250-48PP							
Ventilation Openings	blocked	90	3h	F1,F2	1,35	Max termperature as below: T1 coil: 52,7°C; T1 core: 47,6°C; Metal enclosure: 40,6°C; Ambient: 20,6°C; EUT operation normally. No damage, no hazard.	
USB 2.0 port	Overload	90	3h	F1,F2	1,28-> 1,32-> 1,35->	Max termperature as below: T1 coil: 52,7°C; T1 core: 47,6°C;	

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Clause	Requirement + Test	Result - Remark	Verdict

					1,28	Metal enclosure: 40,6°C; Ambient: 20,6°C; USB 2.0 load 1A->1,5A->2A-0A. EUT operation normally. No damage, no hazards.
USB 3.0 port	Overload	90	3h	F1,F2	1,25->1,30->1,34->1,25	Max termperature as below: T1 coil: 47,1°C; T1 core: 41,2°C; Metal enclosure: 35,4°C; Ambient: 21,7°C; USB 3.0 load 0,5A->1A->1,4A-0A. EUT operation normally. No damage, no hazards. No damage, no hazard.
DC 12V	Overload	90	3h	F1,F2	1,25->1,45->1,70->1,25	Max termperature as below: T1 coil: 48,9°C; T1 core: 42,3°C; Metal enclosure: 32,0°C; Ambient: 21,8°C; Load 1,5A->2,0A->2,9A-0A. EUT operation normally. No damage, no hazards.
Ctrl 12V	Overload	90	3h	F1,F2	1,25->1,28->1,30->1,25	Max termperature as below: T1 coil: 46,5°C; T1 core: 40,8°C; Metal enclosure: 32,5°C; Ambient: 21,9°C; Load 0,5A->0,8A->1A-0A. EUT operation normally. No damage, no hazards.
DC fan	locked	90	3h	F1,F2	1,35	Max termperature as below: T1 coil: 46,9°C; T1 core: 41,6°C; Metal enclosure: 41,3°C; Ambient: 21,0°C; EUT operation normally. No damage, no hazard.
USB 2.0 port	Sc	90	10min	F1,F2	1,25	USB output shut down immediately. No damage, no hazard.
USB 3.0 port	Sc	90	10min	F1,F2	1,25	USB output shut down immediately. No damage, no hazard.
DC 12V	Sc	90	10min	F1,F2	1,20	DC 12V shutdown

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Clause	Requirement + Test	Result - Remark	Verdict

						immediately. No damage, no hazard.
Ctrl 12V	Sc	90	10min	F1,F2	1,20	Ctrl 12V shutdown immediately. No damage, no hazard.
DN2 pin1-3	Sc	90	10min	F1,F2	1,35	EUT operation normally. No damage, no hazard.
TVS49	Sc	90	10min	F1,F2	1,35	EUT operation normally. No damage, no hazard.
UV10 pin 1-5	Sc	90	10min	F1,F2	0,1	Unit shut down immediately. No damage, no hazard.
Test with Building-in power supply model name: U1A-G10150-S-A1						
Ventilation Openings	blocked	90	3h	F1	1,45	EUT operation normally. No damage, no hazard. Max termperature as below: T101 coil: 44,8°C; T101 core: 45,7°C; Metal enclosure: 36,4°C; Ambient: 20,0°C
USB 2.0 port	Overload	90	3h	F1	1,45->1,48->1,52->1,42	USB 2.0 load 1A->1,5A->2A->0A. EUT operation normally. No damage, no hazards. Max termperature as below: T101 coil: 43,6°C; T101 core: 44,6°C; Metal enclosure: 30,6°C; Ambient: 21,4°C
USB 3.0 port	Overload	90	3h	F1	1,44->1,46->1,48->1,41	USB 3.0 load 0,5A->1A->1,4A->0A. EUT operation normally. No damage, no hazards. Max termperature as below: T101 coil: 35,2°C; T101 core: 35,7°C; Metal enclosure: 29,8°C; Ambient: 22,3°C
DC 12V	Overload	90	3h	F1	1,50->1,55->1,80->1,35	Load 1,5A->2,0A->2,9A->0A. EUT operation normally. No damage, no hazards. Max termperature as below: T101 coil: 36,4°C; T101 core: 36,9°C; Metal enclosure: 30,8°C;

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Clause	Requirement + Test	Result - Remark	Verdict

						Ambient: 22,8°C
Ctrl 12V	Overload	90	3h	F1	1,42->1,45->1,48->1,35	Load 0,5A->0,8A->1A-0A. EUT operation normally. No damage, no hazards. Max termperature as below: T101 coil: 37,7°C; T101 core: 38,2°C; Metal enclosure: 30,9°C; Ambient: 23,6°C
DC fan	locked	90	3h	F1	1,45	EUT operation normally. No damage, no hazard. Max termperature as below: T101 coil: 44,7°C; T101 core: 45,5°C; Metal enclosure: 37,1°C; Ambient: 20,7°C
USB 2.0 port	Sc	90	10min	F1	1,40	USB output shut down immediately. No damage, no hazard.
USB 3.0 port	Sc	90	10min	F1	1,40	USB output shut down immediately. No damage, no hazard.
DC 12V	Sc	90	10min	F1	1,35	DC 12V shutdown immediately. No damage, no hazard.
Ctrl 12V	Sc	90	10min	F1	1,35	Ctrl 12V shutdown immediately. No damage, no hazard.
Test with Building-in power supply model name: SFXA1151A						
DC fan	locked	90	3h	F1	1,37	EUT operation normally. No damage, no hazard. Max termperature as below: T1 coil: 42,4°C; T1 core: 40,3°C; Metal enclosure: 34,8°C; Ambient: 23,6°C
Ventilation Openings	blocked	90	3h	F1	1,37	EUT operation normally. No damage, no hazard. Max termperature as below: T1 coil: 62,9°C; T1 core: 60,5°C; Metal enclosure: 44,6°C; Ambient: 24,5°C

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Clause	Requirement + Test	Result - Remark	Verdict

USB 2.0 port	Overload	90	3h	F1	1,37->1,40->1,42->1,34	USB 2.0 load 1A->1,5A->2A-0A. EUT operation normally. No damage, no hazards. Max termperature as below: T1 coil: 37,8°C; T1 core: 34,8°C; Metal enclosure: 33,8°C; Ambient: 24,9°C
USB 3.0 port	Overload	90	3h	F1	1,36->1,40->1,44->1,32	USB 3.0 load 0,5A->1A->1,4A-0A. EUT operation normally. No damage, no hazards. Max termperature as below: T1 coil: 37,3°C; T1 core: 34,2°C; Metal enclosure: 32,8°C; Ambient: 24,4°C
DC 12V	Overload	90	3h	F1	1,38->1,55->1,80->1,32	Load 1,5A->2,0A->2,9A-0A. EUT operation normally. No damage, no hazards. Max termperature as below: T1 coil: 38,1°C; T1 core: 34,9°C; Metal enclosure: 33,7°C; Ambient: 24,3°C
Ctrl 12V	Overload	90	3h	F1	1,35->1,38->1,40->1,32	Load 0,5A->0,8A->1A-0A. EUT operation normally. No damage, no hazards. Max termperature as below: T1 coil: 36,6°C; T1 core: 33,6°C; Metal enclosure: 30,9°C; Ambient: 24,4°C
USB 2.0 port	Sc	90	10min	F1	1,34	USB output shut down immediately. No damage, no hazard.
USB 3.0 port	Sc	90	10min	F1	1,34	USB output shut down immediately. No damage, no hazard.
DC 12V	Sc	90	10min	F1	1,30	DC 12V shutdown immediately. No damage, no hazard.
Ctrl 12V	Sc	90	10min	F1	1,30	Ctrl 12V shutdown immediately. No damage, no hazard.
Model DS-9664NI-M8 test with Building-in power supply model name: DPS-150AB-24 A						

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Clause	Requirement + Test	Result - Remark	Verdict

Ventilation Openings	blocked	90	3h	F1	1,13	Max termperature as below: T501 coil: 49,6°C; T501 core: 49,3°C; Metal enclosure: 32,9°C; Ambient: 24,5°C EUT operation normally. No damage, no hazard.
USB 2.0 port	Overload	90	3h	F1	1,13->1,15->1,17->1,11	Max termperature as below: T501 coil: 48,1°C; T501 core: 45,3°C; Metal enclosure: 29,2°C; Ambient: 24,3°C; USB 2.0 load to 0,5A->1,0A->1,4A-0A. EUT operation normally. No damage, no hazards..
USB 3.0 port	Overload	90	3h	F1	1,13->1,15->1,17->1,11	Max termperature as below: T501 coil: 48,5°C; T501 core: 46,1°C; Metal enclosure: 30,7°C; Ambient: 24,4°C; USB 3.0 load 0,5A->1A->1,4A-0A. USB 3.0 load to 0,5A->1,0A->1,4A-0A. EUT operation normally. No damage, no hazards.
DC 12V	Overload	90	3h	F1	1,09->1,11->1,13->1,05	Max termperature as below: T501 coil: 47,6°C; T501 core: 44,9°C; Metal enclosure: 28,6°C; Ambient: 24,6°C; DC 12V load to 0,5A->0,7A->0,9A-0A. EUT operation normally. No damage, no hazards.
Ctrl 12V	Overload	90	3h	F1	1,09->1,11->1,13->1,05	Max termperature as below: T501 coil: 47,1°C; T501 core: 44,3°C; Metal enclosure: 28,0°C; Ambient: 24,5°C; Ctrl 12V load 0,5A->0,7A->0,9A-0A. EUT operation normally. No damage, no hazards..
DC fan	locked	90	3h	F1	1,13	Max termperature as below: T501 coil: 49,3°C; T501 core: 48,5°C; Metal enclosure: 30,8°C; Ambient: 24,3°C;

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Clause	Requirement + Test	Result - Remark	Verdict

						EUT operation normally. No damage, no hazard.
USB 2.0 port	Sc	90	10min	F1	1,11	USB 2.0 port output shut down immediately. No damage, no hazard.
USB 3.0 port	Sc	90	10min	F1	1,11	USB 3.0 port output shut down immediately. No damage, no hazard.
DC 12V	Sc	90	10min	F1	1,05	DC 12V shutdown immediately. No damage, no hazard.
Ctrl 12V	Sc	90	10min	F1	1,05	Ctrl 12V shutdown immediately. No damage, no hazard.
LN2	Sc	90	10min	F1	1,13	EUT operation normally. No damage, no hazard.
TVS8	Sc	90	10min	F1	1,13	EUT operation normally. No damage, no hazard.
CV40	Sc	90	10min	F1	0,01	EUT shut down immediately. No damage, no hazard.
Supplementary information:						
Sc=Short circuit.						

M.3	**TABLE: Protection circuits for batteries provided within the equipment**					P
Is it possible to install the battery in a reverse polarity position? ..... :				No		—
Equipment Specification	Charging					
	Voltage (V)			Current (A)		
	100V-240V			2,1 A Max		
Manufacturer/type	Battery specification					
	Non-rechargeable batteries		Rechargeable batteries			
	Discharging current (A)	Unintentional charging current (A)	Charging		Discharging current (A)	Reverse charging current (A)
			Voltage (V)	Current (A)		
CR1220	0,005mA	1,8mA (D2 Sc)	--	--	--	--
Note: The tests of M.3.2 are applicable only when above appropriate data is not available.						

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Clause	Requirement + Test	Result - Remark	Verdict

Specified battery temperature (°C) ..... :					45		--
Component No.	Fault condition	Charge/ discharge mode	Test time	Temp. (°C)	Current (A)	Voltage (V)	Observation
CR1220	C154 Sc	discharge mode	10min	--	1,5mA	3	NL, NS, NE, NF
Supplementary information:							
Abbreviation: SC= short circuit; OC= open circuit NL= no chemical leakage; NS= no spillage of liquid; NE= no explosion; NF= no emission of flame or expulsion of molten metal. Test model DS-8632NXI-K8							

M.3	**TABLE: Protection circuits for batteries provided within the equipment**						P
Is it possible to install the battery in a reverse polarity position? ..... :					No		—
Equipment Specification		Charging					
		Voltage (V)			Current (A)		
		100V-240V			2,1 A Max		
Manufacturer/type		Battery specification					
		Non-rechargeable batteries		Rechargeable batteries			
		Discharging current (A)	Unintentional charging current (A)	Charging		Discharging current (A)	Reverse charging current (A)
				Voltage (V)	Current (A)		
CR1220		0,005mA	1,6mA (DN3 Sc)	--	--	--	--
Note: The tests of M.3.2 are applicable only when above appropriate data is not available.							
Specified battery temperature (°C) ..... :					45		--
Component No.	Fault condition	Charge/ discharge mode	Test time	Temp. (°C)	Current (A)	Voltage (V)	Observation
CR1220	DN2 Sc	discharge mode	10min	--	1,5mA	3	NL, NS, NE, NF
Supplementary information:							
Abbreviation: SC= short circuit; OC= open circuit NL= no chemical leakage; NS= no spillage of liquid; NE= no explosion; NF= no emission of flame or expulsion of molten metal. Test model DS-9664NI-M8							

M.4.2	**TABLE: Charging safeguards for equipment containing a secondary lithium battery**	**N/A**

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Clause	Requirement + Test	Result - Remark	Verdict

Maximum specified charging voltage (V).....:	--	—
Maximum specified charging current (A) .....:	--	—
Highest specified charging temperature (°C) .....:	--	
Lowest specified charging temperature (°C) .....:	--	--

Battery manufacturer/type	Operating and fault condition	Measurement			Observation
		Charging voltage (V)	Charging current (A)	Temp. (°C)	
--	--	--	--	--	--

Supplementary information:

Abbreviation: SC= short circuit; OC= open circuit; MSCV= maximum specified charging voltage; MSCC= maximum specified charging current; HSCT= highest specified charging temperature; LSCT= lowest specified charging temperature

Q.1	**TABLE: Circuits intended for interconnection with building wiring (LPS)**						P
Output Circuit	Condition	U_{oc} (V)	Time (s)	I_{sc} (A)		S (VA)	
				Meas.	Limit	Meas.	Limit
Front USB 2.0 port (up)	Normal	5,02	60	2,00	8	8,31	100
Front USB 2.0 port (down)	Normal	5,02	60	2,00	8	8,28	100
Rear USB 3.0 port	Normal	5,03	60	1,40	8	6,66	100
DC 12 V	Normal	11,94	60	2,90	8	32,12	100
Ctrl 12 V	Normal	11,94	60	1,00	8	11,52	100
HDMI port	Normal	5,02	60	0	8	0	100
VGA port	Normal	0	60	0	8	0	100
LAN port	Normal	0	60	0	8	0	100
Alarm port	Normal	0	60	0	8	0	100
Audio port	Normal	0	60	0	8	0	100
Supplementary Information:							
All output ports were protected by PTC Test model DS-8632NXI-K8							

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

Front USB 2.0 port	Normal	5,02	60	1,40	8	8,25	100
Rear USB 3.0 port	Normal	5,03	60	1,40	8	6,64	100
DC 12 V	Normal	11,94	60	0,90	8	10,36	100
Ctrl 12 V	Normal	11,94	60	0,90	8	10,72	100
HDMI port	Normal	5,02	60	0	8	0	100
VGA port	Normal	0	60	0	8	0	100
LAN port	Normal	0	60	0	8	0	100
Alarm port	Normal	0	60	0	8	0	100
Audio port	Normal	0	60	0	8	0	100
Supplementary Information:							
All output ports were protected by PTC. Test model DS-9664NI-M8							

T.2, T.3, T.4, T.5	**TABLE: Steady force test**					P
Part/Location	Material	Thickness (mm)	Probe	Force (N)	Test Duration (s)	Observation
Internal components and parts	--	--	--	10	5	Intact
Enclosure	Metal	Min. 1,0	--	250	5	Intact
Enclosure	Plastic (FRABS-518)	Min.1,7	--	250	5	Intact
Enclosure	Plastic (FR3010 +)	Min.1,7	--	250	5	Intact
Supplementary information:						

T.6, T.9	**TABLE: Impact test**			P
Location/part	Material	Thickness (mm)	Height (mm)	Observation
Enclosure	Metal	Min. 1,0	1300	Intact
Enclosure	Plastic (FRABS-518)	Min.1,7	1300	Intact
Enclosure	Plastic (FR3010 +)	Min.1,7	1300	Intact
Supplementary information:				

T.7	**TABLE: Drop test**	N/A

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Clause	Requirement + Test	Result - Remark	Verdict

Location/part	Material	Thickness (mm)	Height (mm)	Observation
--	--	--	--	--
Supplementary information:				

T.8	**TABLE: Stress relief test**				P
Location/Part	Material	Thickness (mm)	Oven Temperature (°C)	Duration (h)	Observation
Enclosure	Plastic (FRABS-518)	Min.1,7	70	7	Intact
Enclosure	Plastic (FR3010 +)	Min.1,7	70	7	Intact
Supplementary information:					

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Clause	Requirement + Test	Result - Remark	Verdict

4.1.2	TABLE: List of critical components				P
Object / part No.	**Manufacturer/ trademark**	**Type / model**	**Technical data**	**Standard**	**Mark(s) of conformity[1]**
Metal enclosure	Interchangeable	Interchangeable	Min. 1,0 mm thickness	IEC 62368-1:2023; EN IEC 62368-1-2024 + A11:2024	Tested with appliance
Plastic Faceplate	KINGFA SCI & TECH CO LTD	FRABS-518	V-0, Min. thickness 1,7mm, 60°C	UL 94 UL 746	UL E171666
Alternative	Covestro Deutschland AG [PC Resins]	FR3010 +	V-0, Min. thickness 2,5mm, 60°C	UL 94 UL 746	UL E41613
Alternative	NINGBO LG YONGXING CHEMICAL CO LTD	FR-500	V-0, Min. thickness 2,0mm, 60°C	UL 94	UL E203955
Building-in power supply	SHENZHEN HUNTKEY ELECTRIC CO LTD.	HK250-48PP	Input: 100-240V~, 3A, 50Hz-60Hz; Output: +12V, 12,5A; 150W Max., Class I	IEC 62368-1:2018	UL CB Cert. No.: DK-120443-UL; Report No.: E181356-A6272-CB-1
-Alt.	Acbel Polytech Inc.	SFXA1151A	Input: 100-240V~, 3A, 50Hz-60Hz; Output: +12V, 12,5A; 150W Max., Class I	IEC 62368-1:2018	TUV RH Certification No.: JPTUV-126670 Report No.: 60444321 001
-Alt.	SHENZHEN HONOR ELECTRONIC CO LTD	U1A-G10150-S-A1	Input: 100-240V~, 4A, 47Hz-63Hz; Output: +12V, 12,5A; 150W Max., Class I	IEC 62368-1:2014	UL CB Cert. No.: DK-99680-UL; Report No.: ESTS-P20042401
-Alt.	DELTA ELECTRONICS INC	DPS-150AB-24 A	AC INPUT: 100-240V~/3A-1,5A, 50-60Hz, DC OUTPUT: +12V/12,5A. MAX. OUTPUT 150W.	IEC 62368-1:2018	UL CB Cert. No.: DK-123376-UL; Report No.: E131881-A6708-CB-1
DC fan	Asia Vital Components Co., Ltd.	DAZA0825B2L-018	12VDC, 0,09A; 1,56W Max; 33,6CFM; 2600±10% RPM	EN IEC 62368-1:2020/A11:2020	TÜVSÜD Cert No.: B 025730 0895 Rev. 08

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

Alternative	Sunonwealth Electronics Machine Industry Co., Ltd	EE80251B3-000C-A99	12VDC, 88mA; 1,1W; 33CFM; 2600±10% RPM	EN 62368-1:2014 IEC 62368-1:2018 EN IEC 62368-1:2020/A11:2020	TÜVRheinland Cert. No.: R 50007213 Test with appliance
Alternative	Shenzhen Dongweifeng Electronic Technology Co., Ltd.	EFC-08E12M	12VDC, 150mA Max; 1,8W Max; 29,14CFM; 2500±10% RPM	EN IEC 62368-1:2020/A11:2020	TÜVRheinland Cert. No.: R 50467958
Alternative	Dongguan Protechnic Electric Co., Ltd.	MGA8012KB-O25	12VDC, 0,088A Max; 1,056W Max; 35,75CFM; 2800±10% RPM	EN 62368-1:2014/A11:2017	TÜV SÜD Cert. No.: No. B 031023 0137 Rev. 01
PTC (for terminals)	SG Micro Corp	SGM2580CYN5G/TR	2,5Vdc to 5,5Vdc	IEC 60950-1:2005/AMD1:2009, IEC 60950-1:2005/AMD2:2013, IEC 60950-1:2005	UL DK-82510-UL
Alternative	DIODES INC	AP2822 followed by A - H, followed by N or Blank, followed by K, KA, KB or KE, followed by TR-G1.	Input Voltage: 2,7 to 5,5 Vd.c.: Output Continuous Rating: 0,5 to 2,0 A; Output Current Limit: 1,4 to 3,2 A	IEC 62368-1:2014	UL CB Cert No.: US-34501-UL; Report No.: E339337-A6001-CB-1
RTC battery	GUANGZHOU TIANQIU ENTERPRISE CO LTD	CR1220	3V d.c., 38mAh; Max Abnormal Charging Current 2,5mA; Max Abnormal Charging Voltage 3,5V dc	UL1642	UL MH48705
Alternative	POWER GLORY BATTERY TECH (SHENZHEN) CO., LTD	CR1220	3V d.c., 38mAh; Max Abnormal Charging Current 10mA; Max Abnormal Charging Voltage 5V dc	UL1642	UL MH29853
PCB	WENZHOU GALAXY ELECTRONICS CO LTD	01V0	V-0, 130°C	UL796 UL94	UL E157634

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

Alternative	GUANGZHOU FAST-PRINT CIRCUIT TECHNOLOGY CO LTD	M11	V-0, 130°C	UL796 UL94	UL E204460
Alternative	VICTORY GIANT TECHNOLOGY (HUIZHOU) CO LTD	SH	V-0, 130°C	UL796 UL94	UL E248779
Alternative	SHENZHEN MANKUN ELECTRONICS CO LTD	MK-D	V-0, 130°C	UL796 UL94	UL E248237
Alternative	WENZHOU OULONG ELECTRIC CO LTD	OL-D	V-0, 130°C	UL796 UL94	UL E231017
Alternative	Interchangeable	Interchangeable	V-1 or better, 130°C	UL796 UL94	UL
Power plug	LINOYA ELECTRONIC TECHNOLOGY CO LTD	XYP-02L	AC 250V, 16A	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 40015292
Alternative	Phino Electric Co., Ltd.	PHP-206	AC 250V, 16A	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
Power connector	Phino Electric Co., Ltd.	PHS-301	AC 250V, 10A	IEC 60320-1:2015 DIN EN 60320-1 (VDE 0625-1):2016-04; EN 60320-1:2015 + AC:2016	VDE 40038017
Alternative	LINOYA ELECTRONIC TECHNOLOGY CO LTD	XYC-03	AC 250V, 10A	DIN EN 60320-1 (VDE 0625-1):2016-04; EN 60320-1:2015 + AC:2016 IEC 60320-1:2015	VDE 40016051
Power cable	Phino Electric Co., Ltd.	H05VV-F	3 x 0,75 mm²	DIN EN 50525-2-11 (VDE 0285-525-2-11):2012-01; EN 50525-2-11:2011	VDE 113841

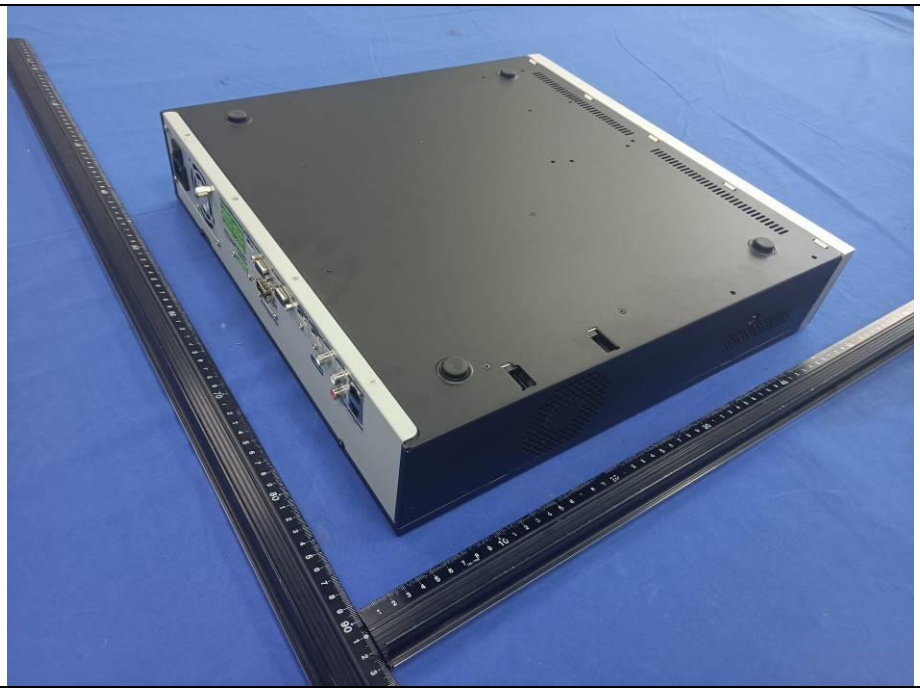
IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Alternative	LINOYA ELECTRONIC TECHNOLOGY CO LTD	H05VV-F	3 x 0,75 mm²	DIN EN 50525-2-11 (VDE 0285-525-2-11):2012-01; EN 50525-2-11:2011	VDE 40035072
Wires	Interchangeable	Interchangeable	PVC, TFE, PTFE, FEP, polychloroprene or polyimide	--	--
Supplementary information: 1) Provided evidence ensures the agreed level of compliance. See OD-CB2039.					

---End of report---

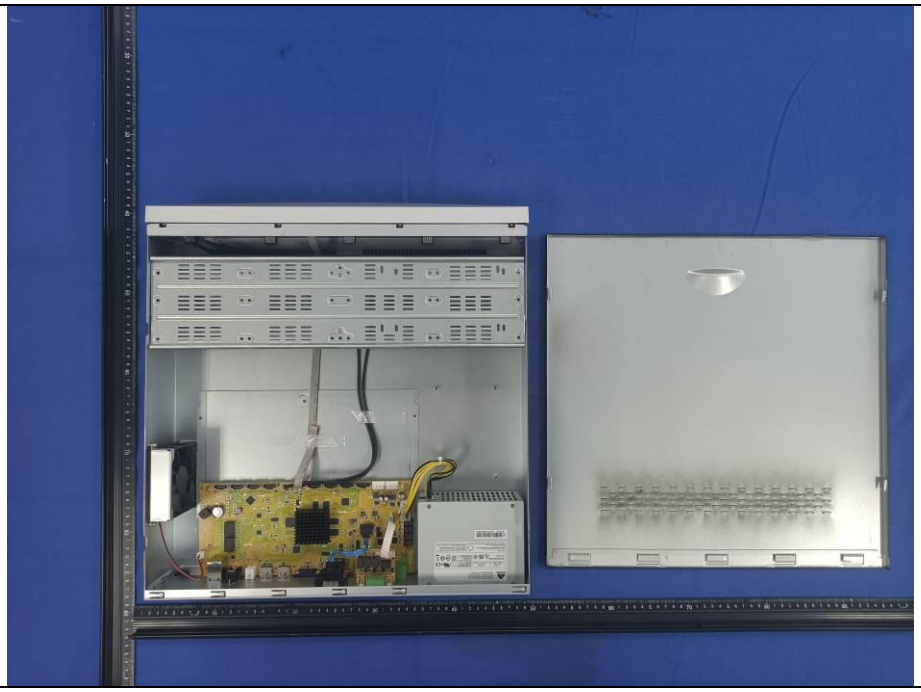
Details of: General view (Model: DS-8632NXI-K8)

Details of: General view (Model: DS-8632NXI-K8)

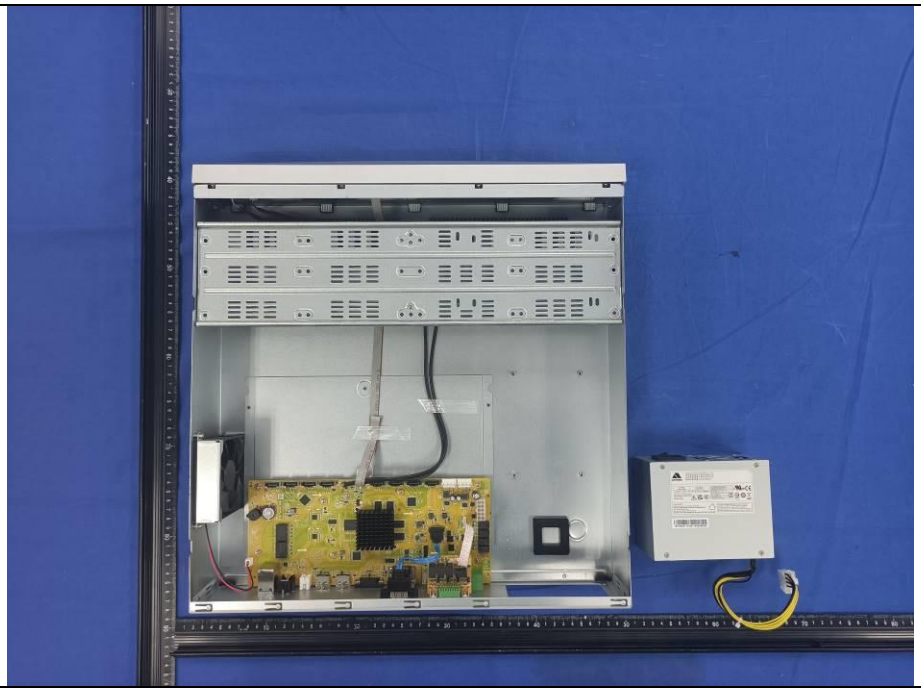


Details of: Terminal view (Model: DS-8632NXI-K8)

Details of: Internal view (Model: DS-8632NXI-K8)



Details of: Internal view (Model: DS-8632NXI-K8)



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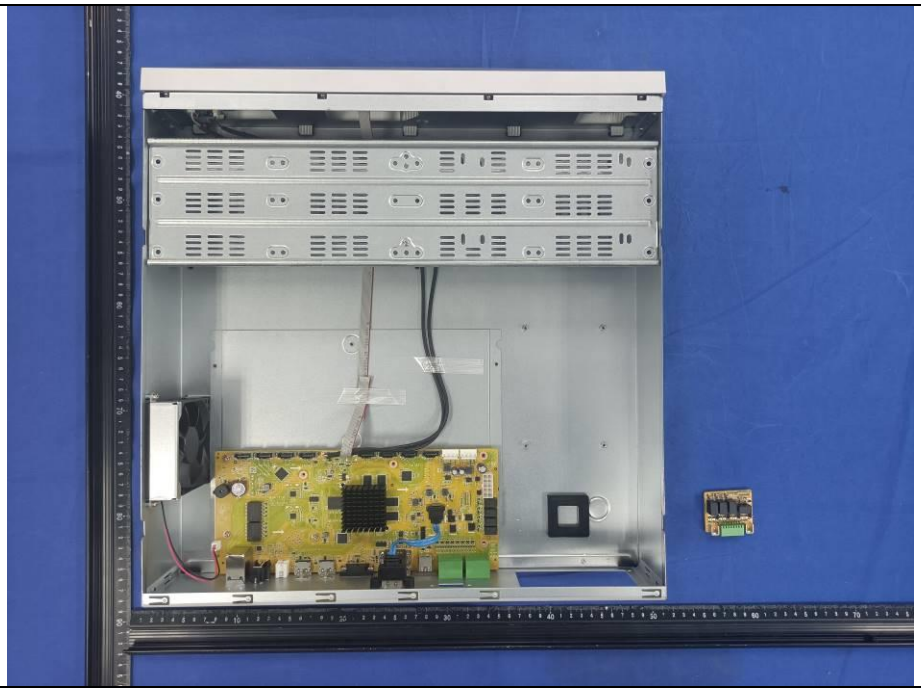

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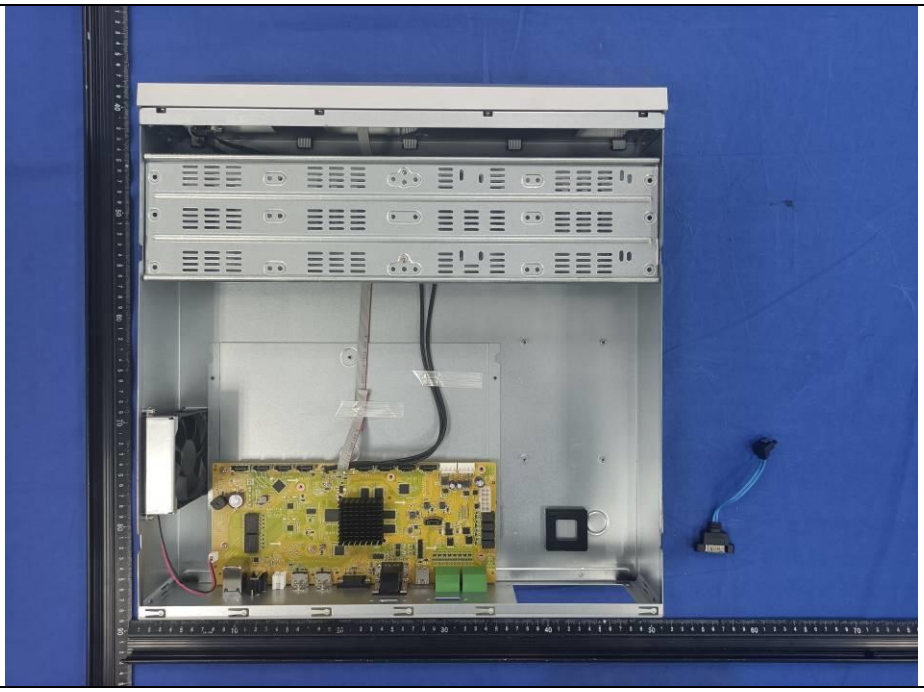

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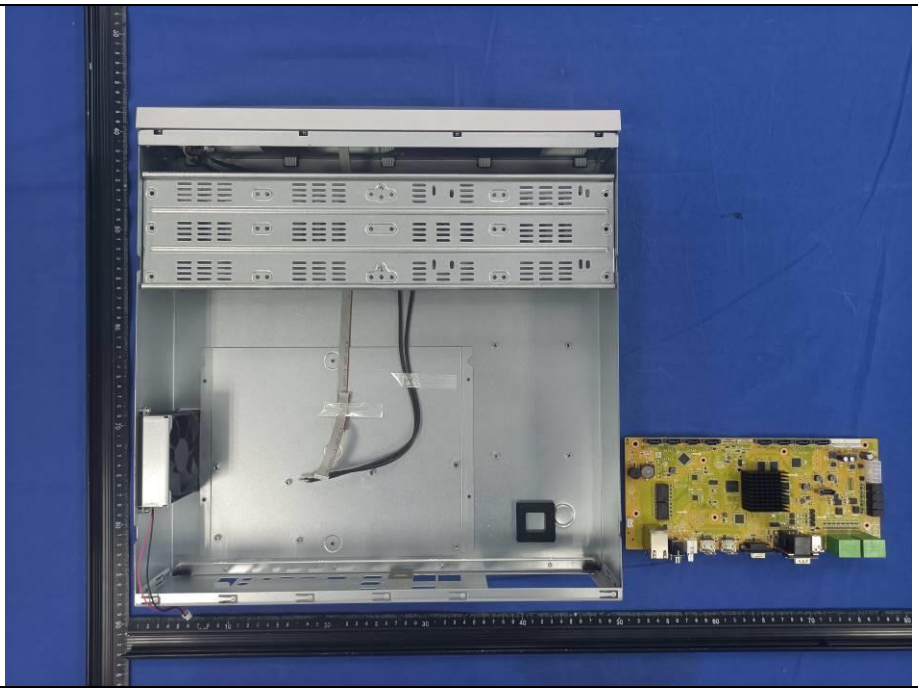
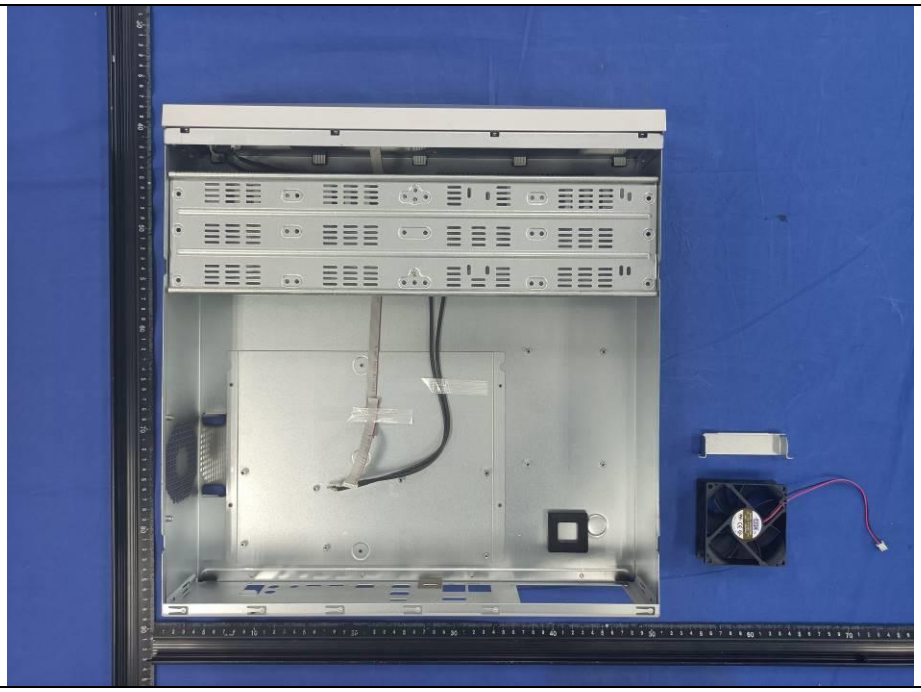
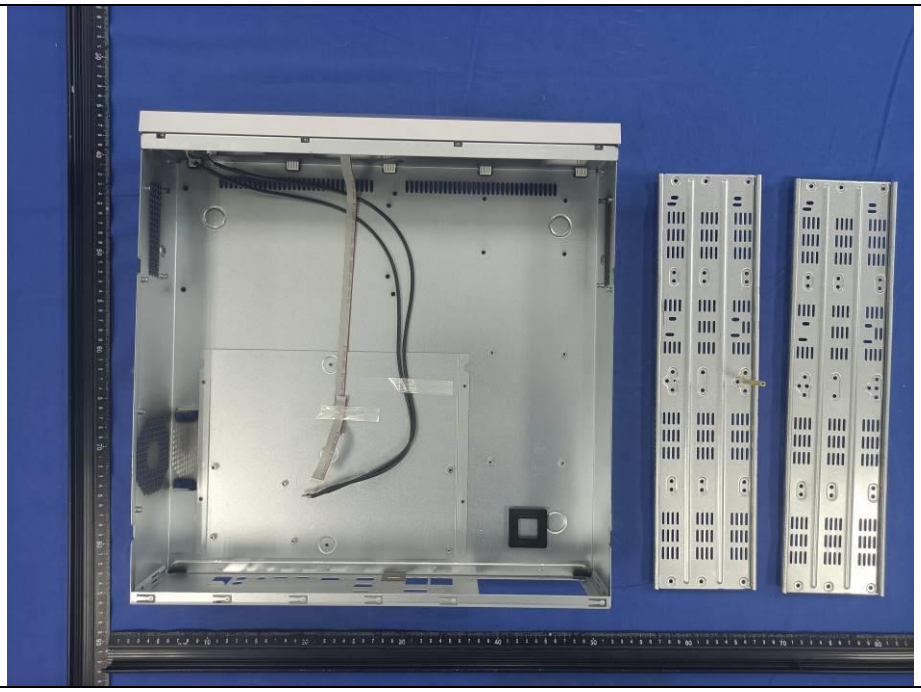


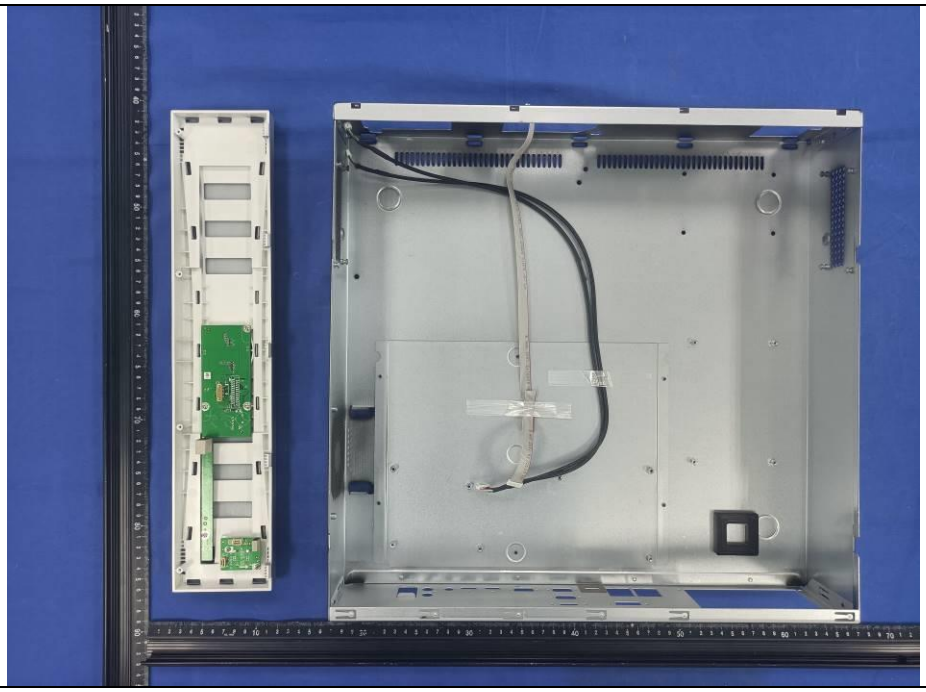
Details of: Internal view (Model: DS-8632NXI-K8)



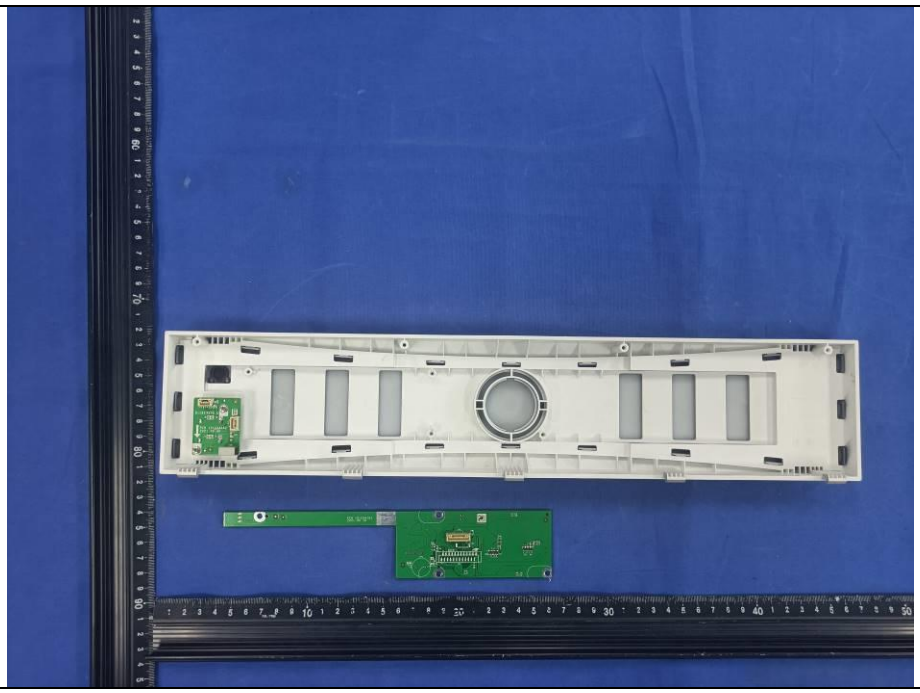
Details of: Internal view (Model: DS-8632NXI-K8)



Details of: Internal view (Model: DS-8632NXI-K8)

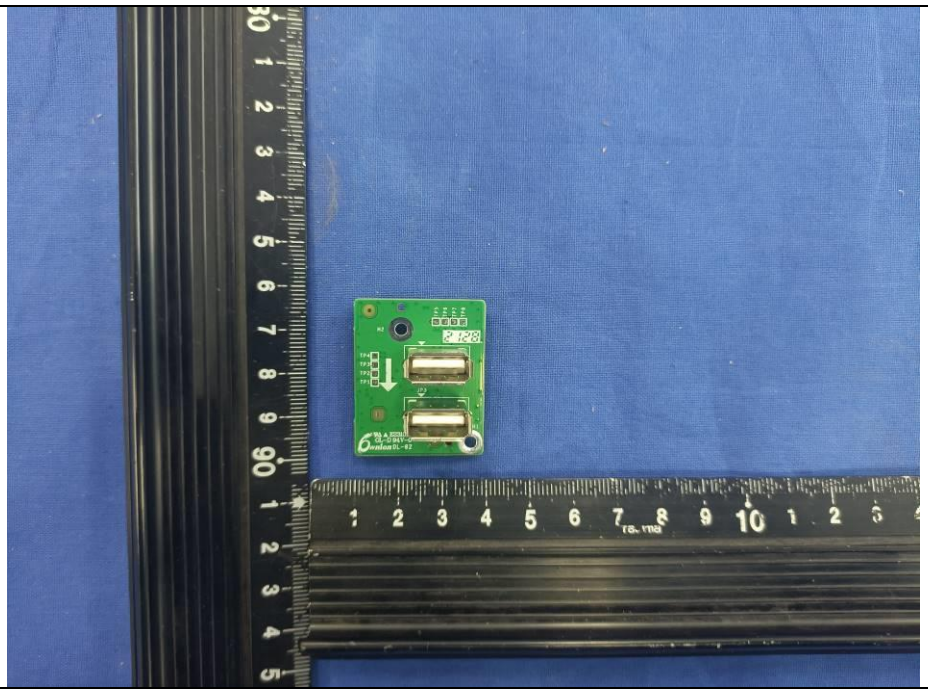


Details of: Internal view (Model: DS-8632NXI-K8)

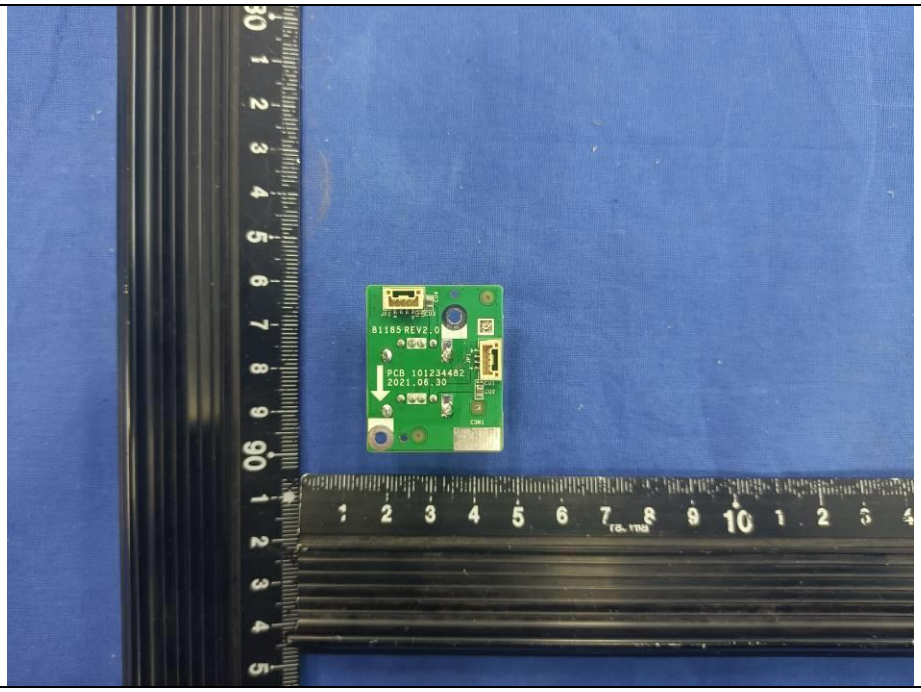


Details of: Internal view (Model: DS-8632NXI-K8)

Details of: PCB-1



Details of: PCB-1



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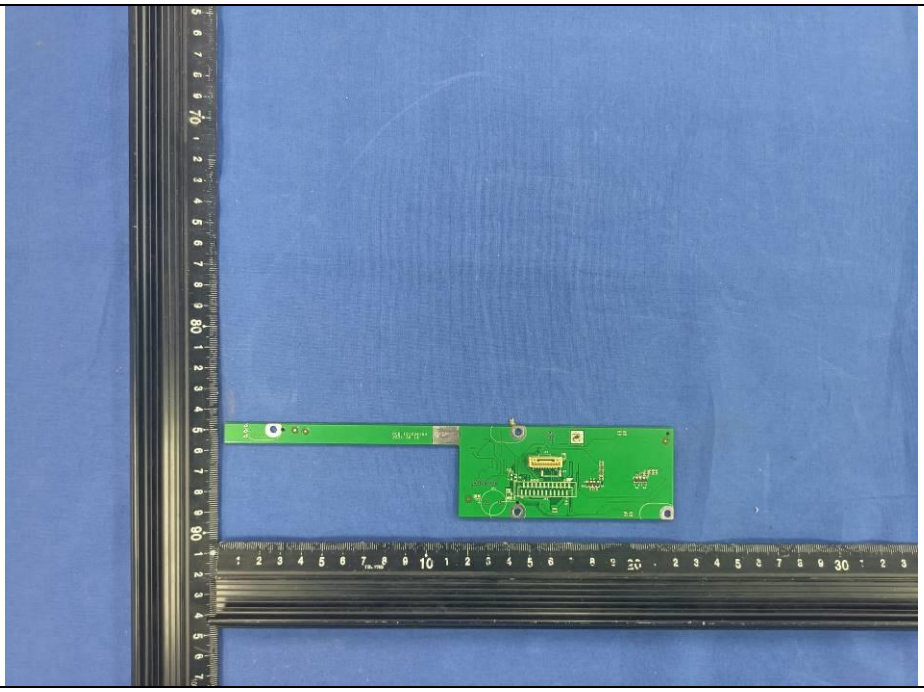
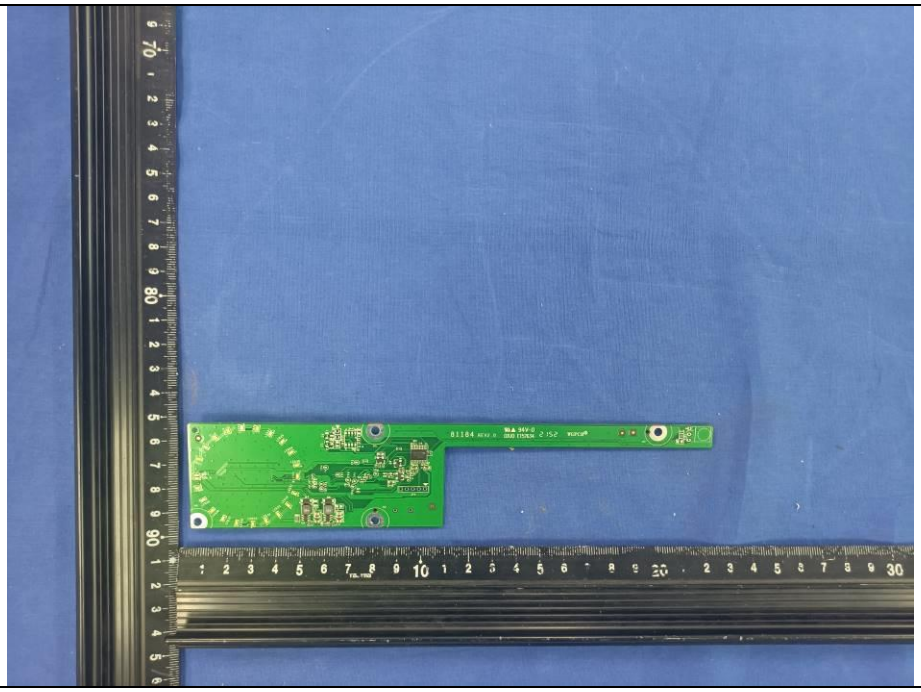
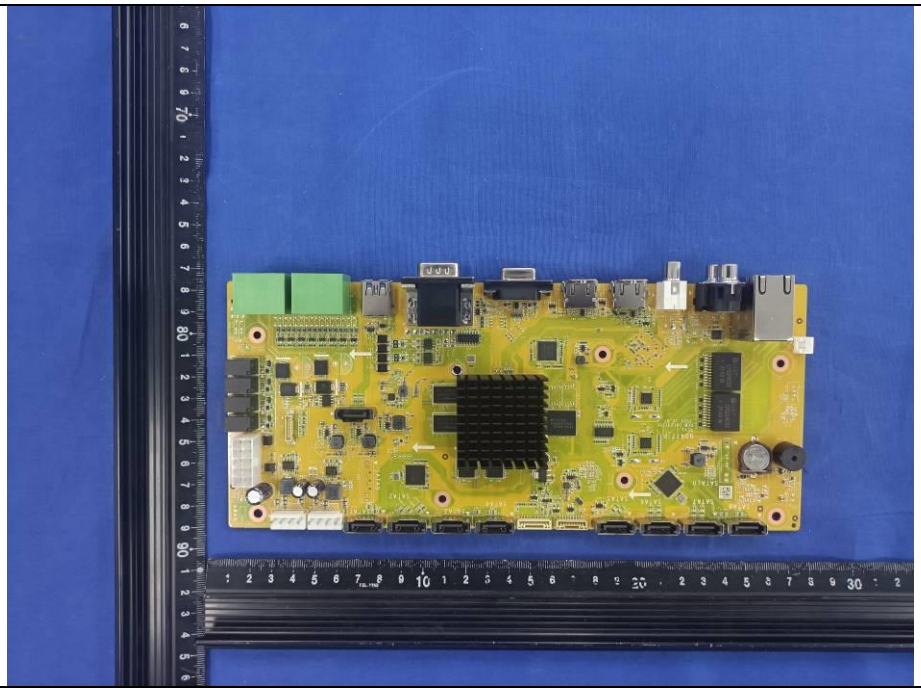


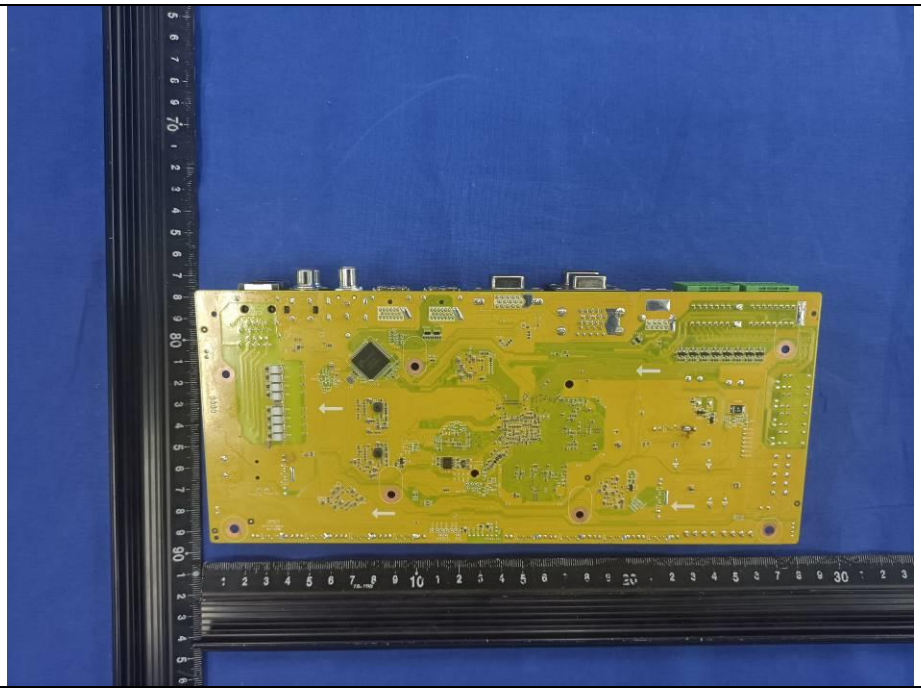
Details of: PCB-2



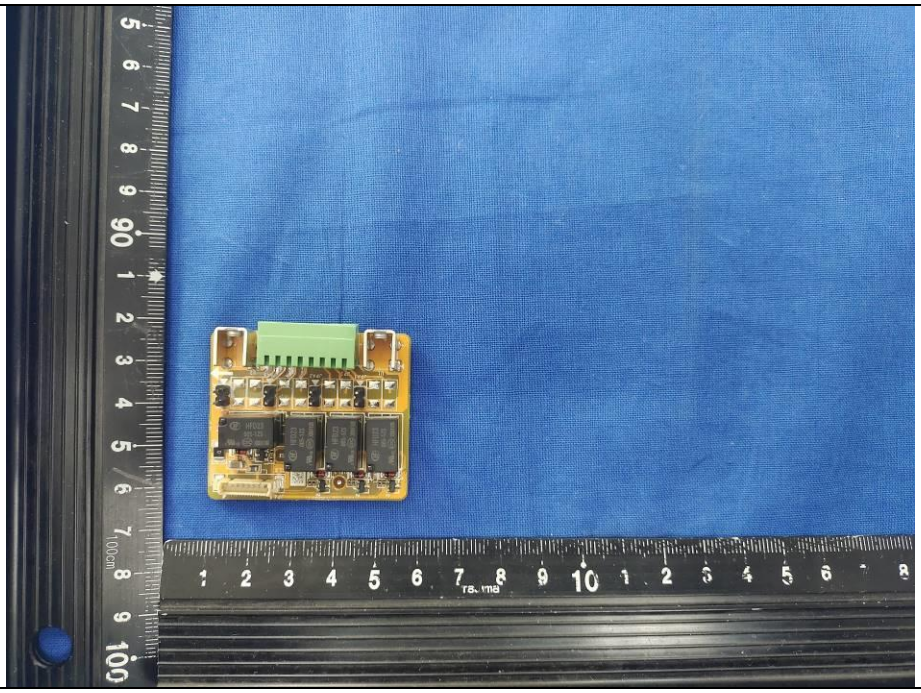
Details of: PCB-3



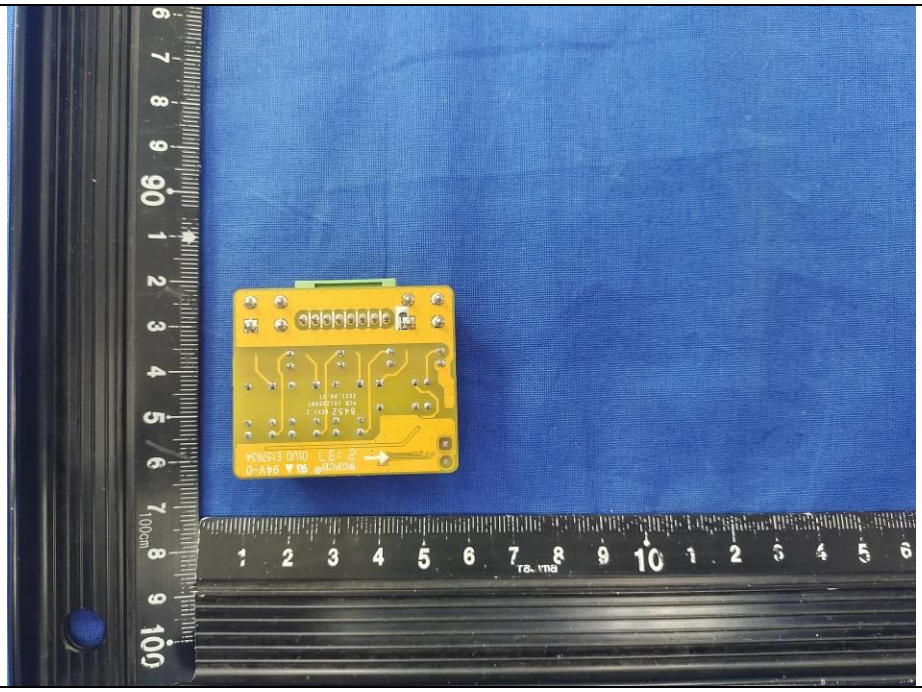
Details of: PCB-3



Details of: PCB-4

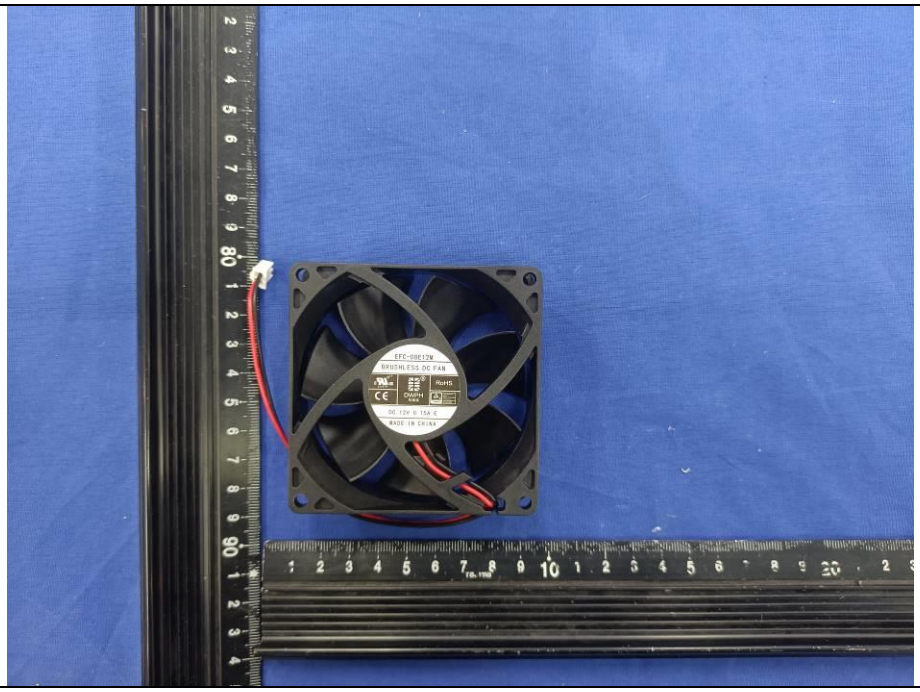


Details of: PCB-4

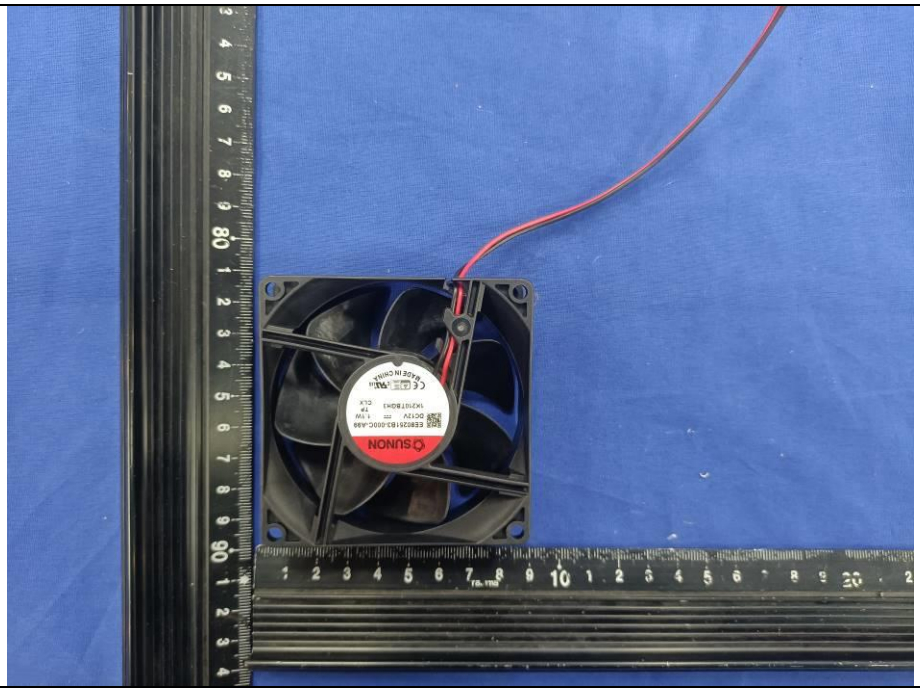


Details of: Built-in power supply (Model: HK250-48PP)

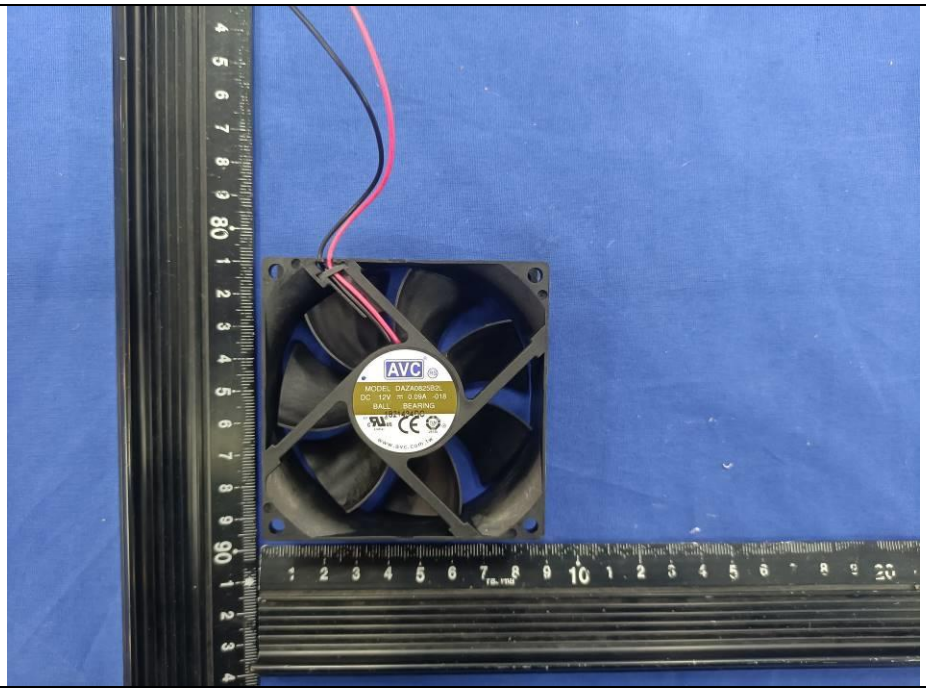
Details of: DC fan (model: EFC-08E12M)



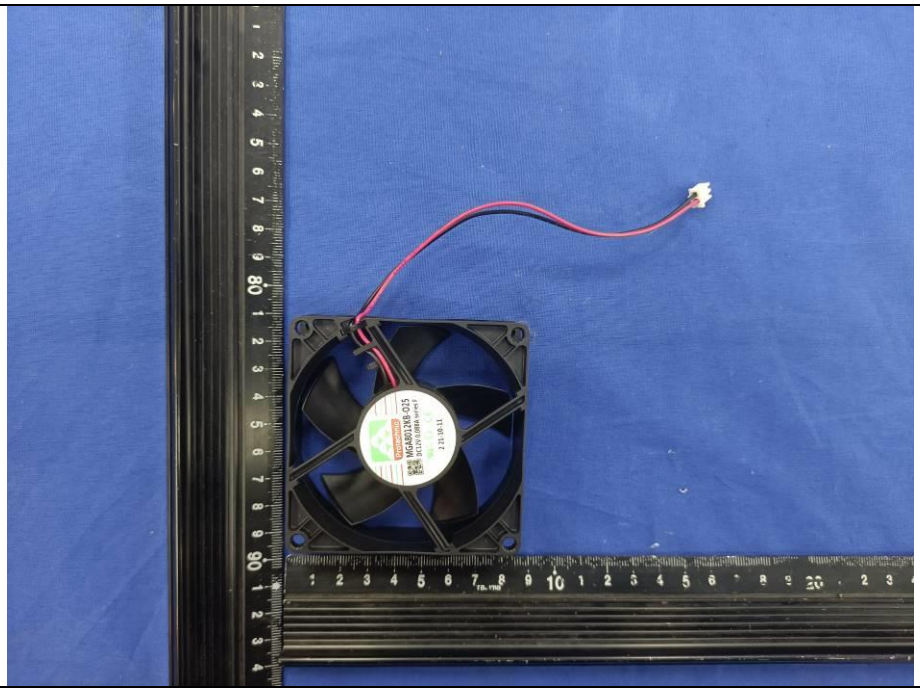
Details of: Alternative DC fan (model: EE80251B3-000C-A99)



Details of: Alternative DC fan (model: DAZA0825B2L-018)



Details of: Alternative DC fan (model: MGA8012KB-O25)



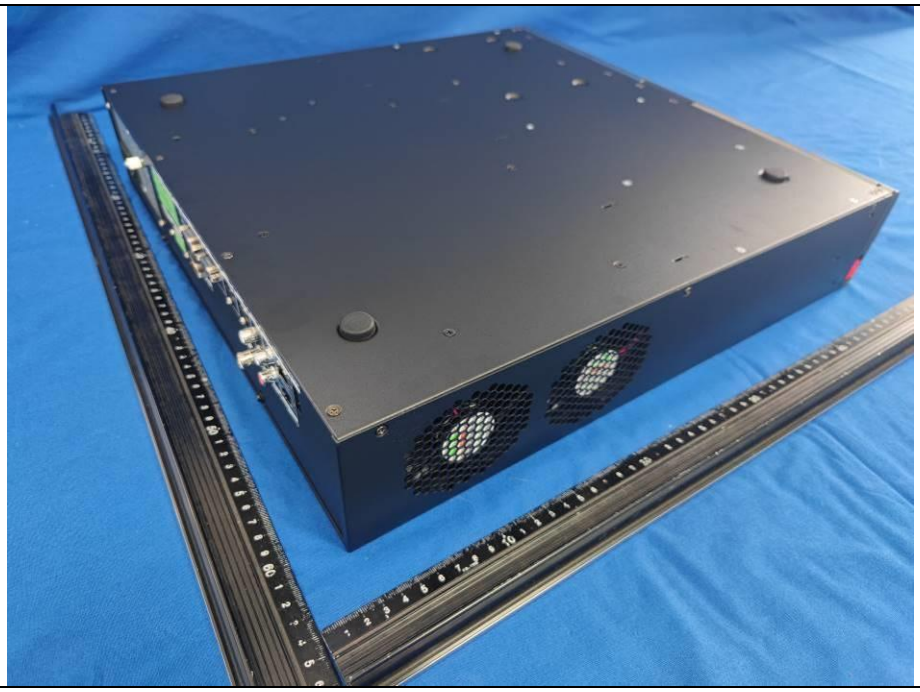
Details of: Power supply cord

Details of: Alternative Built-in power supply (Model: SFXA1151A)

Details of: Alternative Built-in power supply (Model: U1A-G10150-S-A1)

Details of: General view (Model: DS-9664NI-M8)

Details of: General view (Model: DS-9664NI-M8)



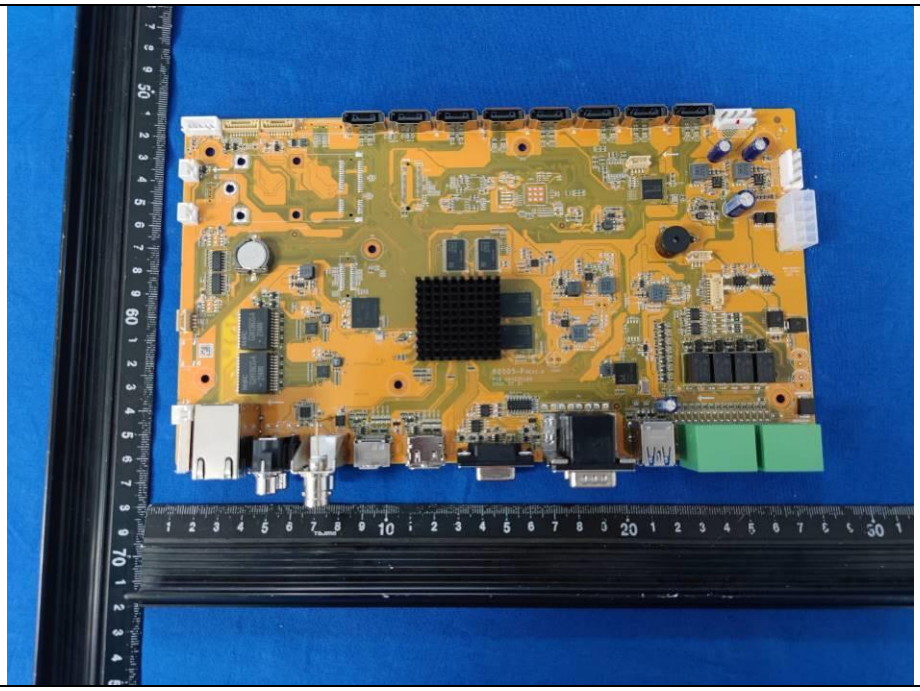
Details of: Terminal view (Model: DS-9664NI-M8)

Details of: Terminal view (Model: DS-9664NI-M8)

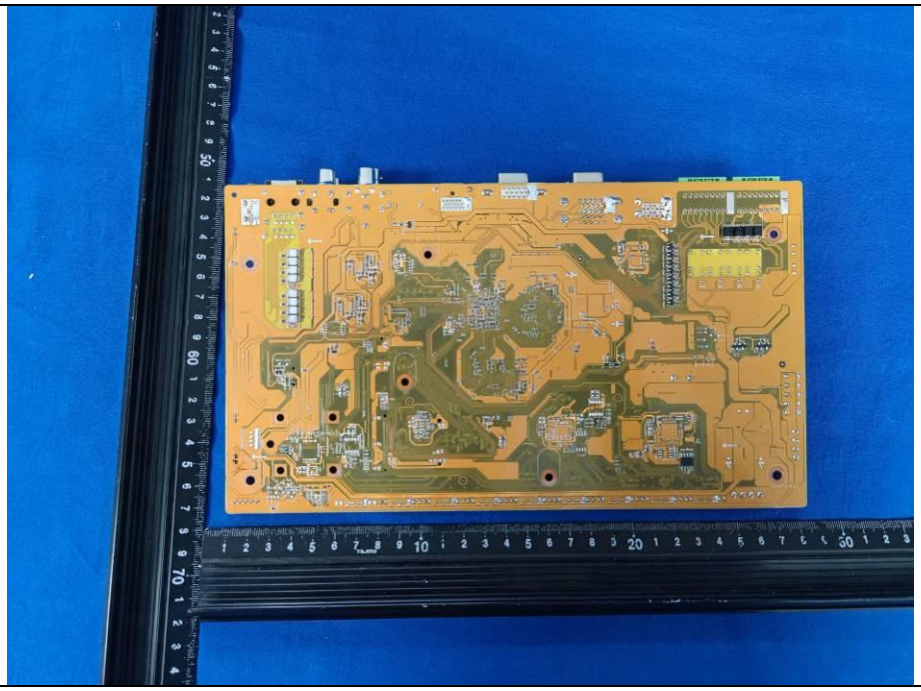
Details of: Internal view (Model: DS-9664NI-M8)

Details of: Internal view (Model: DS-9664NI-M8)

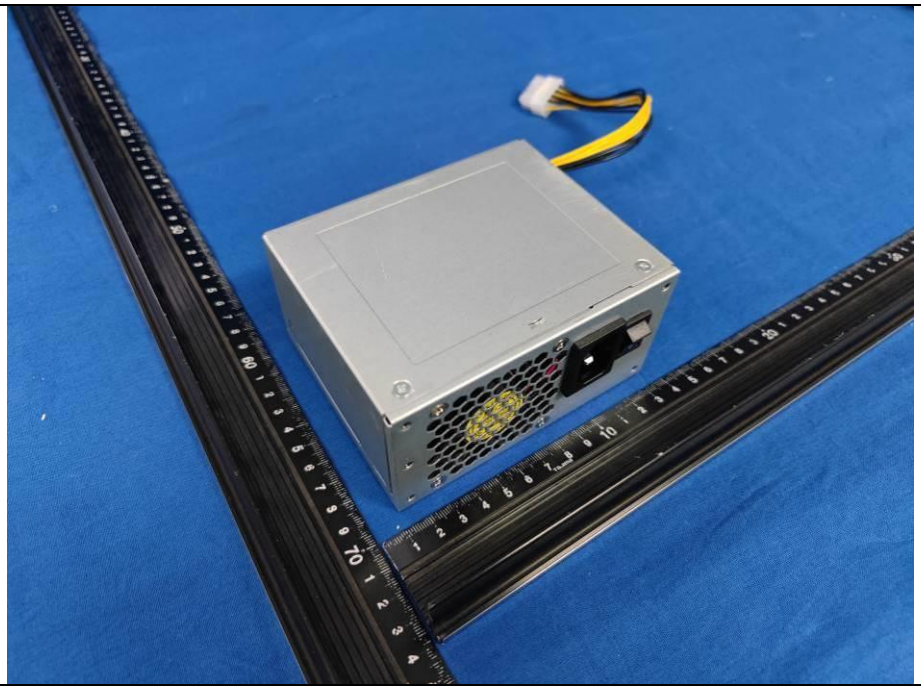
Details of: PCB main board



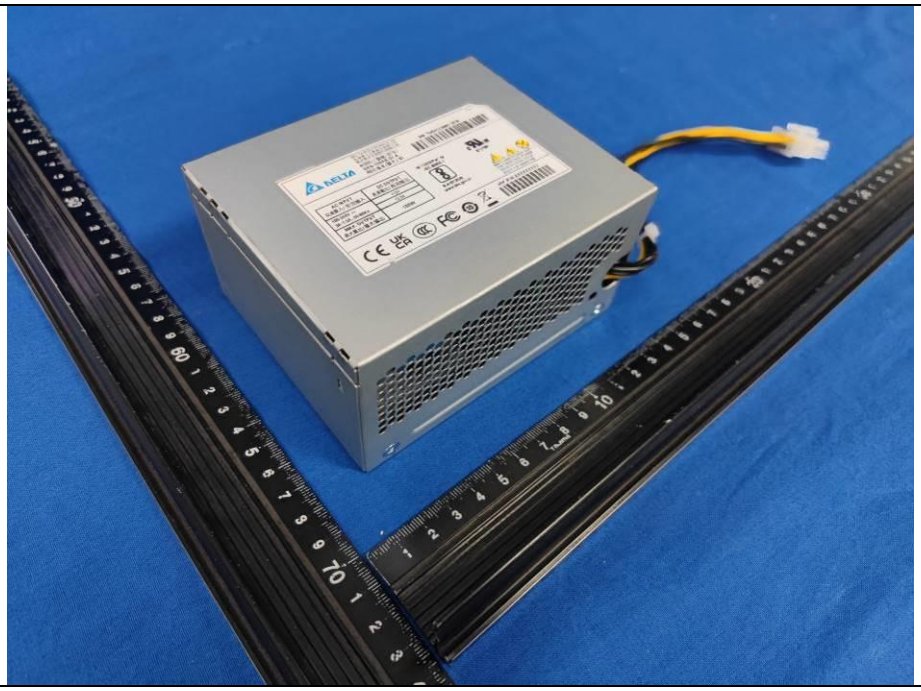
Details of: PCB main board



Details of: Built-in power supply (Model: DPS-150AB-24 A)

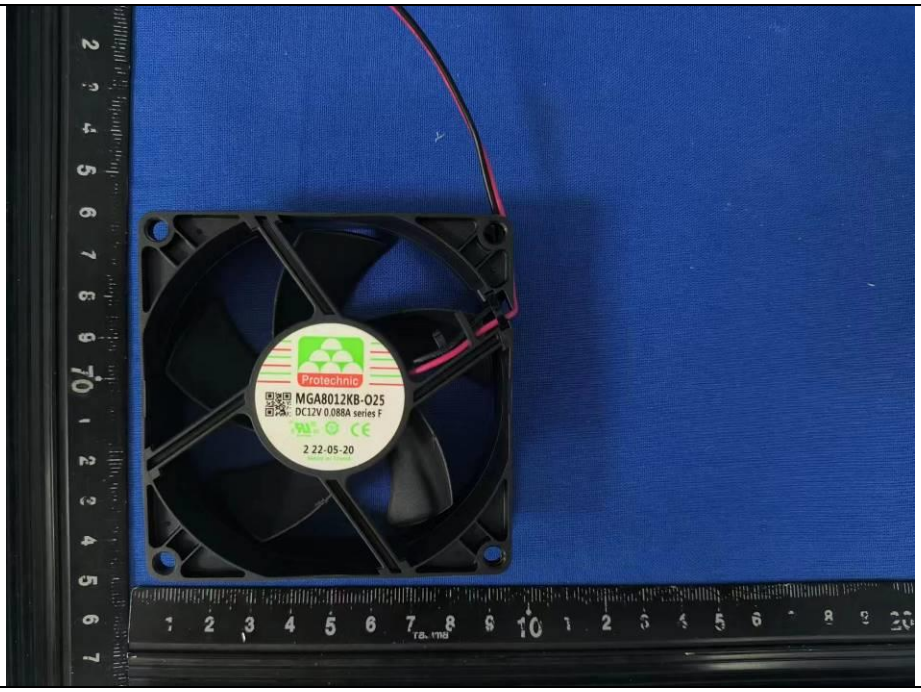


Details of: Built-in power supply (Model: DPS-150AB-24 A)



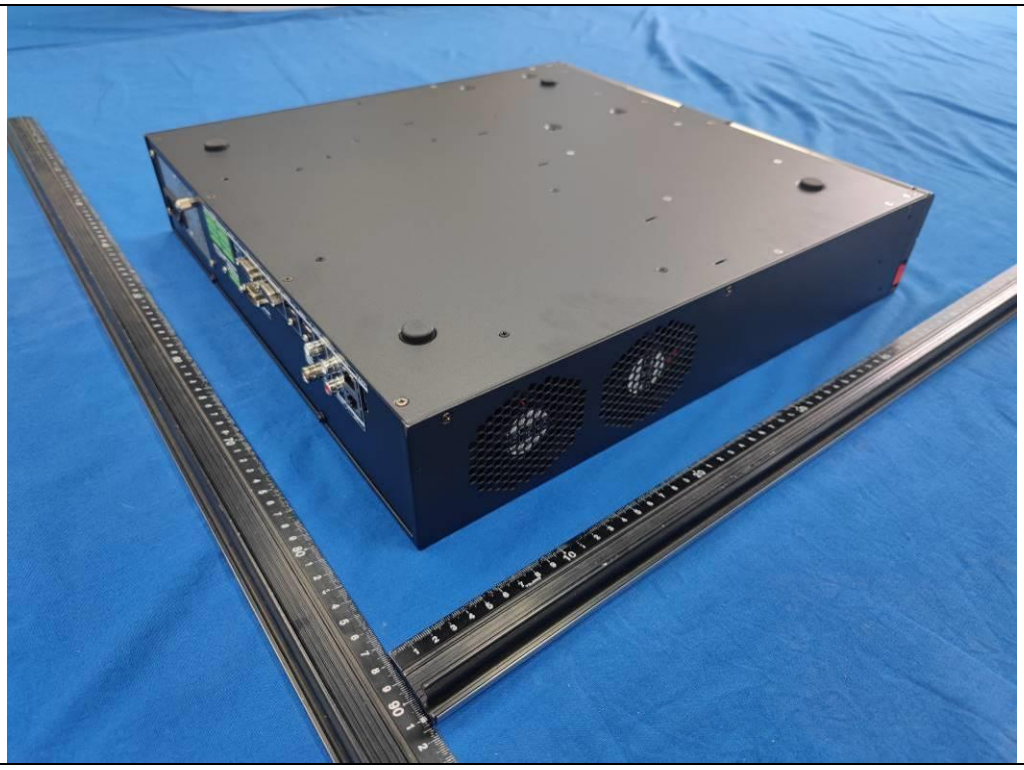
Details of: Built-in power supply (Model: DPS-150AB-24 A)

Details of: DC fan (Model: MGA8012KB-O25)



Details of: General view (Model: iDS-9664NXI-M8/X)

Details of: General view (Model: iDS-9664NXI-M8/X)



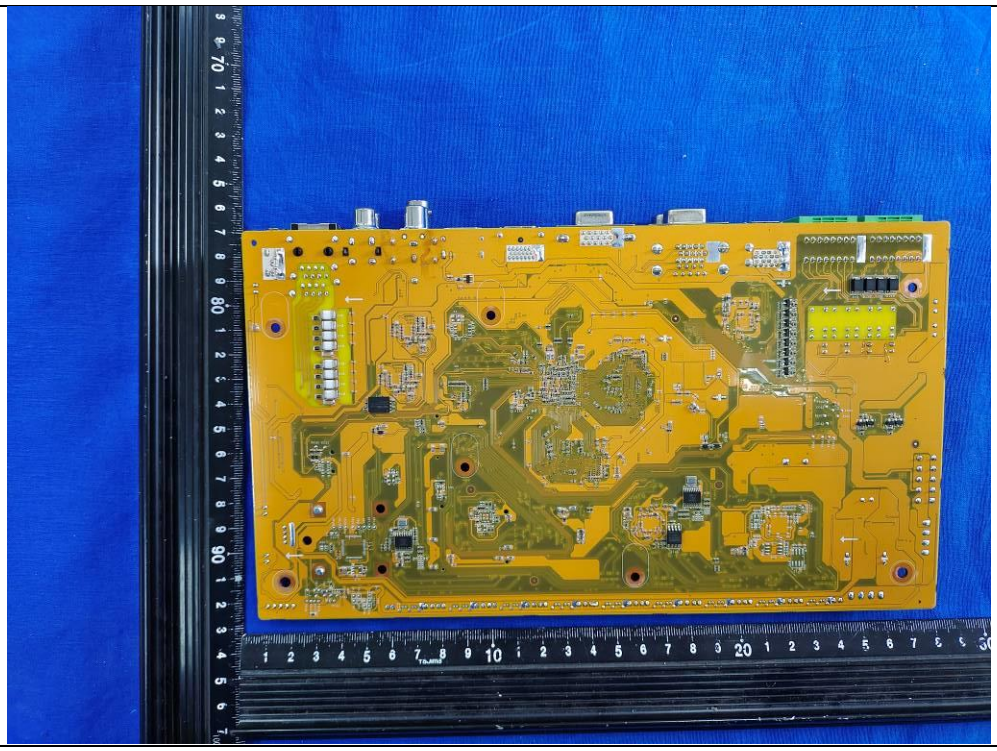
Details of: General view (Model: iDS-9664NXI-M8/X)

Details of: Terminal view (Model: iDS-9664NXI-M8/X)

Details of: Internal view

Details of: PCB main board

Details of: PCB main board



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

Report No.: SHES241202521601

IEC62368_1F ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
ATTACHMENT TO TEST REPORT **IEC 62368-1** **EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES** (Audio/video, information and communication technology equipment Part 1: Safety requirements)			
Differences according to.....:	EN IEC 62368-1-2024 + A11:2024		
TRF template used .....:	IECEE OD-2020-F2:2022, Ed. 1.2		
Attachment Form No.....: **Attachment Originator .....**: **Master Attachment**.....:	EU_GD_IEC 62368_1F UL Solutions (Demko) 2024-05-16		
	CENELEC COMMON MODIFICATIONS (EN)		P
	Clause numbers in the cells that are shaded light grey are clause references in EN IEC 62368-1:2024+A11:2024. All other clause numbers in that column, except for those in the paragraph below, refers to IEC 62368-1:2023. Clauses, subclauses, notes, tables, figures and annexes which are additional to those in IEC 62368-1:2023 are prefixed “Z”.		P
	Add the following annexes: Annex ZA (normative) — Normative references to international publications with their corresponding European publications Annex ZB (normative) — Special national conditions Annex ZC (informative) — A-deviations Annex ZD (informative) — IEC and CENELEC code designations for flexible cords		P
1	**MODIFICATION to the whole document**		--

IEC62368_1F ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	Delete all the “country” notes in the reference document according to the following list: 0.2.1 Note 1 and Note 2; 1 Note 4 and Note 5; 3.3.8.1 Note 2 3.3.8.3 Note 1; 4.1.15 Note; 4.7.3 Note 1 and Note 2 5.4.2.3.2.2 Table 12 Note c; 5.4.2.3.2.4 Note 1 and Note 3; 5.4.2.3.2.4 Table 13 Note 2 5.4.2.5 Note 2; 5.4.5.1 Note; 5.4.10.2.1 Note 5.4.10.2.2 Note; 5.4.10.2.3 Note 5.5.2.1 Note; 5.5.6 Note; 5.6.4.2.1 Note 2 and Note 3 and Note 4 5.6.8 Note 2; 5.7.7.1 Note 1 and Note 2; 8.5.4.2.3 Note 10.2.1 Table 39 Note 3 and Note 4 and Note 5; 10.5.3 Note 2; 10.6.1 Note 3 F.3.3.4 Note 2; F.3.3.6 Note 3; Y.4.1 Note Y.4.5 Note		N/A
2	**Modification to Clause 1**		--
1	**Add** the following note at the end of Clause 1: “NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2011/65/EU.” **Add** the following paragraph and note after Note 5: “This document is a type test standard. NOTE Z2 **Routine tests** of complete equipment, sub-assemblies or components are covered by EN 62911.”		P
3	**Modification to Clause 2**		--

IEC62368_1F ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
2	***Add*** *the following references:* *EN 71-1:2014+A1:2018, Safety of toys - Part 1: Mechanical and physical properties* *EN 50332-1:2013, Sound system equipment: Headphones and earphones associated with personal music players - Maximum sound pressure level measurement methodology - Part 1: General method for "one package equipment"* *EN 50332-2:2013, Sound system equipment: Headphones and earphones associated with personal music players - Maximum sound pressure level measurement methodology - Part 2: Matching of sets with headphones if either or both are offered separately, or are offered as one package equipment but with standardised connectors between the two allowing to combine components of different manufacturers or different design* *EN 50332-3:2017, Sound system equipment: headphones and earphones associated with personal music players - Maximum sound pressure level measurement methodology - Part 3: Measurement method for sound dose management* *IEC/TR 62471-2, Photobiological safety of lamps and lamp systems - Part 2: Guidance on manufacturing requirements relating to non-laser optical radiation safety*		N/A
4	**Modification to Clause 4**		--
4	**Add** the following new subclause 4.Z1 after subclause 4.9: “For compliance with B.3 and B.4 in circuits connected to an AC **mains**, protective **devices** shall be provided, subject to the following: - for **pluggable equipment type A**, the protective **devices** shall be included as parts of the equipment, with the exception of components in series with the **mains** input to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, for which the building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet;		P

IEC62368_1F ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	- for **pluggable equipment type B** or **permanently connected equipment**, the protection may be the dedicated overcurrent and short-circuit protection in the building installation, provided that the means of protection, for example a fuse or circuit breaker, is fully specified in the installation instructions. Where protective **devices** are required within the equipment, the protective **devices** within the equipment shall operate before or at the same time the expected building installation protection will operate. For earth faults in single-phase equipment, it is not necessary to provide 2 protective **devices**. It is expected that the building installation will protect against earth faults. This applies also in countries where an IT power distribution system is used."		N/A
5	**Modification to subclause 4.1.9**		--
4.1.9	Add the following paragraph at the end of this subclause: "Products need to comply with the requirements of this document with appropriate measurement uncertainty. NOTE Z1 See also the RED ADCO position on 'Measurement uncertainty in published harmonized standards'."		N/A
6	**Modification to subclause 5.4.9.1**		--
5.4.9.1	**Add** the following note after the 5th paragraph: "NOTE Z1 For guidance on the use of high voltage source, see IEC 60060-1, Clause 8 of IEC 60243-1 and IEC 61180."		N/A
7	**Modification to subclause 5.4.2.3.2.4**		--
5.4.2.3.2.4	**Add** the following at the end of this subclause: "The requirement for interconnection with **external circuit** in a HBES/BACS network is in addition given in EN IEC 63044-3:2018."		N/A
8	**Modification to subclause 5.6.6.2**		--
5.6.6.2	**Replace** item d) with the following: "d) For equipment powered from a DC mains, if the protective current rating of the circuit under test exceeds 25 A, the test current shall be minimum as required in item a), unless the manufacturer specifies a higher value."		N/A
9	**Modification to subclause 9.3.1**		--

IEC62368_1F ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
9.3.1	**Replace** the second paragraph with the following: "An **accessible** part that, while in contact with the body, is likely to drop in temperature upon touch can be evaluated under the limits of Annex A of IEC Guide 117:2010 using the test method of 4.5 of IEC Guide 117."		N/A
10	**Modification to subclause 10.2.1**		--
10.2.1	**Add** the following to c) and d) in Table 38: "For additional requirements, see 10.5.1."		N/A
11	**Modification to subclause 10.4.1**		--
10.4.1	**Replace** the second paragraph of 10.4.1 with: "Electronic light effect equipment does not have to comply with the requirements of 10.4. However, 114 IEC/TR 62471-2 shall be considered and proper installation instructions shall be provided. **Replace** the ninth paragraph of 10.4.1 with: The following information shall be provided in the user manual for safe operation and installation. This information shall also be provided for safe operation by a skilled person who may be exposed to Risk Group 3 energy levels. Adequate instructions for proper assembly, installation, maintenance and safe use, including clear warnings concerning precautions to avoid possible exposure to hazardous optical radiation; and Advice on safe operating procedures and warnings concerning **reasonably foreseeable misuse,** malfunctions and hazardous failure modes. Where servicing and maintenance procedures are detailed, they shall include explicit instructions on safe procedures to be followed; and The marking on the equipment shall be reproduced in the user manual. A yellow background is not required in the user manual.		N/A
12	**Modification to subclause 10.4.4**		--
10.4.4	**Replace** the last paragraph of 10.4.4 with: "Compliance against material degradation from UV radiation is checked by the applicable tests of Annex C."		N/A
13	**Modification to subclause 10.5.1**		--

IEC62368_1F ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
10.5.1	**Add** the following after the first paragraph: "For RS1 compliance is checked by measurement under the following conditions: In addition to the **normal operating conditions**, all controls adjustable from the outside of the equipment by hand, by any object such as a **tool** or a coin, and those internal adjustments or pre-sets which are not locked in a reliable manner, are adjusted so as to give maximum radiation whilst maintaining an intelligible picture for 1 h, at the end of which the measurement is made. NOTE Z1 Soldered joints and paint lockings are examples of adequate locking. The dose-rate is determined by means of a radiation monitor with an effective area of 10 cm2, at any point at a distance of 10 cm from the outer surface of the equipment. Moreover, the measurement shall be made under fault conditions causing an increase of the high-voltage, provided an intelligible picture is maintained for 1 h, at the end of which the measurement is made. For RS1, the dose-rate shall not exceed 1 µSv/h taking account of the background level. NOTE Z2 These values appear in Directive 2013/59/Euratom of 5 December 2013."		N/A
14	**Modification to subclause 10.5.3**		--
10.5.3	**Replace** the second paragraph of 10.5.3 with: "The amount of radiation is determined by means of a radiation monitor of the ionizing chamber type with an effective area of 1 000 mm2 ± 10 mm2 or by measuring equipment of other types giving equivalent results."		N/A
15	**Modification to Clause 10**		--
	Replace 10.6 with the following:		N/A
10.6	**Safeguards against acoustic energy sources**		N/A
10.6.1	**General**		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
10.6.1.1	**Introduction** **Safeguard** requirements for protection against long-term exposure to excessive sound pressure levels from personal music players closely coupled to the ear are specified below. Requirements for earphones and headphones intended for use with personal music players are also covered. A personal music player is a portable equipment intended for use by an **ordinary person**, that: - is designed to allow the user to listen to audio or audiovisual content / material; and - uses a listening **device**, such as headphones or earphones that can be worn in or on or around the ears; and - has a player that can be body worn (of a size suitable to be carried in a clothing pocket) and is intended for the user to walk around with while in continuous use (for example, on a street, in a subway, at an airport, etc.). EXAMPLES Portable CD players, MP3 audio players, mobile phones with MP3 type features, PDAs or similar equipment. Personal music players shall comply with the requirements of either 10.6.2 or 10.6.3. NOTE 1 Protection against acoustic energy sources from telecom applications is referenced to ITU-T P.360. NOTE 2 It is the intention of the Committee to allow the alternative methods for now, but to only use the dose measurement method as given in 10.6.5 in future. Therefore, manufacturers are encouraged to implement 10.6.5 as soon as possible.		N/A

IEC62368_1F ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	Listening **devices** sold separately shall comply with the requirements of 10.6.6. These requirements are valid for music or video mode only. The requirements do not apply to: - **professional equipment**; NOTE 3 **Professional equipment** is equipment sold through special sales channels. All products sold through normal electronics stores or general public sales channels are considered not to be **professional equipment**. - hearing aid equipment and other devices for assistive listening; - the following type of analogue personal music players: - long distance radio receiver (for example, a multiband radio receiver or world band radio receiver, an AM radio receiver), and - cassette player/recorder; NOTE 4 This exemption has been allowed because this technology is falling out of use and it is expected that within a few years it will no longer exist. This exemption will not be extended to other technologies. - a player while connected to an external amplifier that does not allow the user to walk around while in use; - hearing protection devices (HPD) that comply with EN 352-8 For equipment that is clearly designed or intended primarily for use by children, the limits of the relevant toy standards may apply. The relevant requirements are given in EN 71-1:2014+A1:2018, 4.20 and the related tests methods and measurement distances apply.		N/A
10.6.2	**Classification of devices without the capacity to estimate sound dose**		N/A

IEC62368_1F ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
10.6.2.1	**General** This standard is transitioning from short-term based (30 s) requirements to long-term based (40 h) requirements. These clauses remain in effect only for devices that do not comply with sound dose estimation as stipulated in EN 50332-3:2017. For classifying the acoustic output *L*Aeq,*T*, measurements are based on the A-weighted equivalent sound pressure level over a 30 s period. For music where the average sound pressure (long term *L*Aeq,*T*) measured over the duration of the song is lower than the average produced by the programme simulation noise, measurements may be done over the duration of the complete song. In this case, *T* becomes the duration of the song. NOTE Classical music, acoustic music and broadcast typically has an average sound pressure (long term *L*Aeq,*T*) which is much lower than the average programme simulation noise. Therefore, if the player is capable to analyse the content and compare it with the programme simulation noise, the warning does not need to be given as long as the average sound pressure of the song does not exceed the required limit. For example, if the player is set with the programme simulation noise to 85 dB, but the average music level of the song is only 65 dB, there is no need to give a warning or ask an acknowledgement as long as the average sound level of the song is not above the basic limit of 85 dB.		N/A

IEC62368_1F ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
10.6.2.2	**RS1 limits (to be superseded, see 10.6.3.2)** RS1 is a class 1 acoustic energy source that does not exceed the following: for equipment provided as a package (player with its listening device), and with a proprietary connector between the player and its listening device, or where the combination of player and listening device is known by other means such as setting or automatic detection, the *L*Aeq,*T* acoustic output shall be ≤ 85 dB when playing the fixed "programme simulation noise" described in EN 50332-1:2013. for equipment provided with a standardized connector (for example, a 3,5 mm headphone/earphone jack) that allows connection to a listening device for general use, the unweighted r.m.s. output voltage shall be ≤ 27 mV (analogue interface) or −25 dBFS (digital interface) when playing the fixed 214 "programme simulation noise" described in EN 50332-1:2013. The RS1 limits will be updated for all devices as per 10.6.3.2.		N/A
10.6.2.3	**RS2 limits (to be superseded, see 10.6.3.3)** RS2 is a class 2 acoustic energy source that does not exceed the following: for equipment provided as a package (player with its listening device), and with a proprietary connector between the player and its listening device, or when the combination of player and listening device is known by other means such as setting or automatic detection, the LAeq,T acoustic output shall be ≤ 100 dB(A) when playing the fixed "programme simulation noise" as described in EN 50332-1:2013. for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general use, the unweighted r.m.s. output voltage shall be ≤ 150 mV (analogue interface) or −10 dBFS (digital interface) when playing the fixed "programme simulation noise" as described in 226 EN 50332-1:2013.		N/A
10.6.2.4	**RS3 limits** RS3 is a class 3 acoustic energy source that exceeds RS2 limits.		N/A
10.6.3	**Classification of devices (new)**		N/A

IEC62368_1F ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
10.6.3.1	**General** Previous limits (10.6.2) created abundant false negative and false positive PMP sound level warnings. New limits, compliant with The Commission Decision 2009/490/EC of 23 June 2009, are given below.		N/A
10.6.3.2	**RS1 limits (new)** RS1 is a class 1 acoustic energy source that does not exceed the following: for equipment provided as a package (player with its listening device), and with a proprietary connector between the player and its listening device, or where the combination of player and listening device is known by other means such as setting or automatic detection, the LAeq,T acoustic output shall be ≤ 80 dB when playing the fixed “programme simulation noise” described in EN 50332-1:2013. for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general use, the unweighted r.m.s. output voltage shall be ≤ 15 mV (analogue interface) or −30 dBFS (digital interface) when playing the fixed “programme simulation noise” described in EN 50332-1:2013.		N/A
10.6.3.3	**RS2 limits (new)** RS2 is a class 2 acoustic energy source that does not exceed the following: for equipment provided as a package (player with its listening device), and with a proprietary connector between the player and its listening device, or where the combination of player and listening device is known by other means such as setting or automatic detection, the weekly **sound exposure level**, as described in EN 50332-3:2017, shall be ≤ 80 dB when playing the fixed “programme simulation noise” described in 249 EN 50332-1:2013. for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general use, the unweighted r.m.s. output level, integrated over one week, as described in EN 50332-3:2017, shall be ≤ 15 mV (analogue interface) or −30 dBFS		N/A
10.6.4	**Requirements for maximum sound exposure**		N/A

IEC62368_1F ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
10.6.4.1	**Measurement methods** All volume controls shall be turned to maximum during tests. Measurements shall be made in accordance with EN 50332-1:2013 or EN 50332-2:2013 as applicable.		N/A
10.6.4.2	**Protection of persons** Except as given below, protection requirements for parts **accessible** to **ordinary persons**, **instructed persons** and **skilled persons** are given in 4.3. NOTE 1 Volume control is not considered to be a **safeguard.** Between RS2 and an **ordinary person**, the **basic safeguard** may be replaced by an **instructional safeguard** in accordance with Clause F.5, except that the **instructional safeguard** shall be placed on the equipment, or on the packaging, or in the instruction manual. Alternatively, the **instructional safeguard** may be given through the equipment display during use. The elements of the **instructional safeguard** shall be as follows: - element 1a: the symbol  , IEC 60417-6044 (2011–01) - element 2: “High sound pressure” or equivalent text - element 3: “Hearing damage risk” or equivalent text - element 4: “Do not listen at high volume levels for long periods.” or equivalent text An **equipment safeguard** shall prevent exposure of an **ordinary person** to an RS2 source without intentional physical action from the **ordinary person** and shall automatically return to an output level not exceeding what is specified for an RS1 source when the power is switched off. The equipment shall provide a means to actively inform the user of the increased sound level when the equipment is operated with an output level exceeding RS1 limits. Any means used shall be acknowledged by the user before activating a mode of operation which allows for an output level exceeding RS1 limits. The acknowledgement does not need to be repeated more than once every 20 h of cumulative listening time.		N/A

IEC62368_1F ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	NOTE 2 Examples of means include visual or audible signals. Action from the user is always needed. NOTE 3 The 20 h listening time is the accumulative listening time, independent of how often and how long the personal music player has been switched off. A **skilled person** shall not be unintentionally exposed to RS3.		
10.6.5	**Requirements for dose-based systems**		N/A
10.6.5.1	**General requirements** Personal music players shall give the warnings as provided below when tested according to 281 EN 50332-3:2017, using the limits from this clause. The manufacturer may offer optional settings to allow the users to modify when and how they wish to receive the notifications and warnings to promote a better user experience without defeating the **safeguards**. This allows the users to be informed in a method that best meets their physical capabilities and device usage needs. If such optional settings are offered, an administrator (for example, parental restrictions, business/educational administrators, etc.) shall be able to lock any optional settings into a specific configuration. The personal music player shall be supplied with easy to understand explanation to the user of the dose management system, the risks involved, and how to use the system safely. The user shall be made aware that other sources may significantly contribute to their sound exposure, for example work, transportation, concerts, clubs, cinema, car races, etc.		N/A
10.6.5.2	**Dose-based warning and requirements** When a dose of 100 % CSD is reached, and at least at every 100 % further increase of CSD, the device shall warn the user and require an acknowledgement. In case the user does not acknowledge, the output level shall automatically decrease to a level in compliance with class RS1 limits. The warning shall at least clearly indicate that listening above 100 % CSD leads to the risk of hearing damage or loss.		N/A

IEC62368_1F ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
10.6.5.3	**Exposure-based requirements** With only dose-based requirements, cause and effect could be far separated in time, defying the purpose of educating users about safe listening practice. In addition to dose-based requirements, a PMP shall therefore also put a limit to the short-term sound level a user can listen at. The exposure-based limiter (EL) shall automatically reduce the sound level not to exceed 100 dB(A) or 150 mV integrated over the past 180 s, based on methodology defined in EN 50332-3:2017. The EL settling time (time from starting level reduction to reaching target output level) shall be 10 s or less. Test of EL functionality is conducted according to EN 50332-3:2017, using the limits from this clause. For equipment provided as a package (player with its listening device), the level integrated over 180 s shall be 100 dB or lower. For equipment provided with a standardized connector, the un-weighted level integrated over 180 s shall be no more than 150 mV for an analogue interface and no more than −10 dBFS for a digital interface. In case the source is known not to be music (or test signal), the EL may be disabled.		N/A
10.6.6	**Requirements for listening devices (headphones, earphones, etc.)**		N/A
10.6.6.1	**Corded listening devices with analogue input** With 94 dB *L*Aeq acoustic pressure output of the listening device, and with the volume and sound settings in the listening device (for example, built-in volume level control, additional sound features like equalization, etc.) set to the combination of positions that maximizes the measured acoustic output level, the input voltage of the listening device when playing the fixed “programme simulation noise” as described in EN 50332-1:2013 shall be ≥ 75 mV. NOTE The values of 94 dB and 75 mV correspond with 85 dB and 27 mV in 10.6.2.2. or 100 dB and 150 mV in 10.6.2.3.		N/A
10.6.6.2	**Corded listening devices with digital input** With any playing device playing the fixed “programme simulation noise” described in EN 50332-1:2013, and with the volume and sound settings in the listening device (for example, built-in volume level control, additional sound features like equalization, etc.) set to the combination of positions that maximize the measured acoustic output, the *L*Aeq,*T* acoustic output of the listening device shall be ≤ 100 dB with an input signal of −10 dBFS.		N/A

IEC62368_1F ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
10.6.6.3	**Cordless listening devices** In cordless mode, with any playing and transmitting device playing the fixed programme simulation noise described in EN 50332-1:2013; and respecting the cordless transmission standards, where an air interface standard exists that specifies the equivalent acoustic level; and with volume and sound settings in the receiving device (for example, built-in volume level control, additional sound features like equalization, etc.) set to the combination of positions that maximize the measured acoustic output for the above mentioned programme simulation noise, the *L*Aeq,*T* acoustic output of the listening device shall be ≤ 100 dB with an input signal of −10 dBFS.		N/A
10.6.6.4	**Measurement method** Measurements shall be made in accordance with EN 50332-2:2013 as applicable.”		N/A
16	**Modification to subclause G.3.1.2**		--
	Add the following note after the first paragraph: “NOTE Z1 An IEC 60730 series standard is considered relevant if the component in question falls within its scope.”		N/A
17	**Modification to subclause G.7.1**		--
	Add the following note at the end of the subclause: “NOTE Z1 The harmonized code designations corresponding to the IEC cable types are given in Annex ZD.”		P
18	**Modification to subclause M.2**		--
	Add the following paragraph after the first paragraph: “The size of the battery compartment shall be designed taking into account the battery compartment recommendations of the relevant battery standard. NOTE For general guidance on the design of the battery compartment, see Clause 8 of IEC 62485-4.”		N/A
19	**Modification to Bibliography**		--

IEC62368_1F ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	Add the following notes for the standards indicated: IEC 60060-1 NOTE Harmonized as EN 60060-1. IEC 60130-9 NOTE Harmonized as EN 60130-9. IEC 60204-1 NOTE Harmonized as EN IEC 60204-1. IEC 60204-11 NOTE Harmonized as EN IEC 60204-11. IEC 60243-1 NOTE Harmonized as EN 60243-1. IEC 60269-2 NOTE Harmonized as HD 60269-2. IEC 60309-1 NOTE Harmonized as EN 60309-1. IEC 60364 NOTE some parts harmonized in HD 384/HD 60364 series. IEC 60601-2-4 NOTE Harmonized as EN 60601-2-4. IEC 60664-5:2005 NOTE Harmonized as EN 60664-5:2007. IEC 60721-3-4 NOTE Harmonized as EN IEC 60721-3-4. IEC 61032:1997 NOTE Harmonized as EN 61032:1998 (not modified). IEC 61180 NOTE Harmonized as EN 61180. IEC 61508-1 NOTE Harmonized as EN 61508-1. IEC 61558-2-1 NOTE Harmonized as EN 61558-2-1. IEC 61558-2-4 NOTE Harmonized as EN 61558-2-4. IEC 61558-2-6 NOTE Harmonized as EN 61558-2-6. IEC 61643-21 NOTE Harmonized as EN 61643-21. IEC 61643-311 NOTE Harmonized as EN 61643-311. IEC 61643-321 NOTE Harmonized as EN 61643-321. IEC 61643-331 NOTE Harmonized as EN IEC 61643-331. IEC 61140:2016 NOTE Harmonized as EN 61140:2016. IEC 61439-5:2014 NOTE Harmonized as EN 61439-5:2015. IEC 61969-3 NOTE Harmonized as EN 61969-3. IEC 62040:2017 NOTE Harmonized as EN IEC 62040:2019. IEC 62305-1 NOTE Harmonized as EN 62305-1. IEC 62368-3 NOTE Harmonized as EN 62368-3. IEC 62485-4 NOTE Harmonized as EN IEC 62485-4. ISO 10218-1 NOTE Harmonized as EN ISO 10218-1. ISO 10218-2 NOTE Harmonized as EN ISO 10218-2. ISO 13482 NOTE Harmonized as EN ISO 13482. ISO 13850 NOTE Harmonized as EN ISO 13850.		N/A
20	**Addition of annexes**		--
ZB	**ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)**		N/A

IEC62368_1F ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
4.1.15	**Finland, Norway** and **Sweden** To the end of the subclause the following is added: **Class I pluggable equipment type A** intended for connection to other equipment or a network shall, if safety relies on connection to reliable earthing or if surge suppressors are connected between the network terminals and **accessible** parts, have a marking stating that the equipment shall be connected to an earthed **mains** socket-outlet. The marking text in the applicable countries shall be as follows: In **Finland**: “Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan” In **Norway**: “Apparatet må tilkoples jordet stikkontakt” In **Sweden**: “Apparaten skall anslutas till jordat uttag”		N/A
4.7.3	**United Kingdom** To the end of the subclause the following is added: The torque test is performed using a socket-outlet complying with BS 1363, and the plug part shall be assessed to the relevant clauses of BS 1363. Also see Annex G.4.2 of this annex.		N/A
5.4.11.1 and Annex G	**Finland and Sweden** To the end of the subclause the following is added: For separation of the telecommunication network from earth the following is applicable: If this insulation is solid, including insulation forming part of a component, it shall at least consist of either - two layers of thin sheet material, each of which shall pass the electric strength test below, or - one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	If this insulation forms part of a semiconductor component (e.g. an optocoupler), there is no distance through insulation requirement for the insulation consisting of an insulating compound completely filling the casing, so that **clearances** and **creepage distances** do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition - passes the tests and inspection criteria of 5.4.7 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 5.4.9 shall be performed using 1,5 kV), and - is subject to routine testing for electric strength during manufacturing, using a test voltage of 1,5 kV. It is permitted to bridge this insulation with a capacitor complying with EN 60384-14, subclass Y2. A capacitor classified Y3 according to EN 60384-14, may bridge this insulation under the following conditions: - the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 60384-14, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in 5.4.10; - 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.		
5.5.2.1	**Norway** After the 3rd paragraph the following is added: Due to the IT power distribution system used, capacitors are required to be rated for the applicable line-to-line voltage (230 V).		N/A
5.5.6	**Finland, Norway** and **Sweden** To the end of the subclause the following is added: Resistors used as **basic safeguard** or bridging **basic insulation** in **class I pluggable equipment type A** shall comply with G.10.1 and the test of G.10.3.		N/A

IEC62368_1F ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.6.4.2.1	**Ireland and United Kingdom** After the indent for **pluggable equipment type A**, the following is added: - the **protective current rating** is taken to be 13 A, this being the largest rating of fuse used in the **mains** plug.		N/A
5.6.4.2.1	**France** After the indent for **pluggable equipment type A**, the following is added: - in certain cases, the **protective current rating** of the circuit supplied from the **mains** is taken as 20 A instead of 16 A. *Justification:* In France, according to NF C15-100 standard, in certain cases, the maximum rated current of the protective **device** circuit-breaker is 20 A.		N/A
5.6.5.1	**Ireland and United Kingdom** 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 mm2 to 1,5 mm2 in cross-sectional area.		N/A
5.6.8	**Norway** To the end of the subclause the following is added: Equipment connected with an earthed mains plug is classified as **class I equipment**. See the Norway marking requirement in 4.1.15. The symbol IEC 60417-6092, as specified in F.3.6.2, is accepted.		N/A
5.7.7.1	**Norway and Sweden** To the end of the subclause the following is added: The screen of the television distribution system is normally not earthed at the entrance of the building and there is normally no equipotential bonding system within the building. Therefore the protective earthing of the building installation needs to be isolated from the screen of a cable distribution system.		N/A

IEC62368_1F ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	It is however accepted to provide the insulation external to the equipment by an adapter or an interconnection cable with galvanic isolator, which may be provided by a retailer, for example. The user manual shall then have the following or similar information in Norwegian and Swedish language respectively, depending on in what country the equipment is intended to be used in: “Apparatus connected to the protective earthing of the building installation through the mains connection or through other apparatus with a connection to protective earthing – and to a television distribution system using coaxial cable, may in some circumstances create a fire hazard. Connection to a television distribution system therefore has to be provided through a device providing electrical isolation below a certain frequency range (galvanic isolator, see EN 60728-11)” NOTE In Norway, due to regulation for CATV-installations, and in Sweden, a galvanic isolator shall provide electrical insulation below 5 MHz. The insulation shall withstand a dielectric strength of 1,5 kV RMS, 50 Hz or 60 Hz, for 1 min. Translation to Norwegian (the Swedish text will also be accepted in Norway): “Apparater som er koplet til beskyttelsesjord via nettplugg og/eller via annet jordtilkoplet utstyr – og er tilkoplet et koaksialbasert kabel-TV nett, kan forårsake brannfare. For å unngå dette skal det ved tilkopling av apparater til kabel-TV nett installeres en galvanisk isolator mellom apparatet og kabel-TV nettet.” Translation to Swedish: ”Apparater som är kopplad till skyddsjord via jordat vägguttag och/eller via annan utrustning och samtidigt är kopplad till kabel-TV nät kan i vissa fall medföra risk för brand. För att undvika detta skall vid anslutning av apparaten till kabel-TV nät galvanisk isolator finnas mellan apparaten och kabel-TV nätet.”.		

IEC62368_1F ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
8.5.4.2.3	**United Kingdom** Add the following after the 2nd dash bullet in 3rd paragraph: An emergency stop system complying with the requirements of EN IEC 60204-1 and EN ISO 13850 is required where there is a risk of personal injury.		N/A
B.3.1 and B.4	**Ireland and United Kingdom** The following is applicable: To protect against excessive currents and short-circuits in the primary circuit of **direct plug-in equipment**, tests according to Annexes B.3.1 and B.4 shall be conducted using an external miniature circuit breaker complying with EN 60898-1, Type B, rated 32A. If the equipment does not pass these tests, suitable protective devices shall be included as an integral part of the **direct plug-in equipment**, until the requirements of Annexes B.3.1 and B.4 are met		N/A
G.4.2	**United Kingdom** To the end of the subclause the following is added: The plug part of direct plug-in equipment shall be assessed to BS 1363: Part 1, 12.1, 12.2, 12.3, 12.9, 12.11, 12.12, 12.13, 12.16, and 12.17, except that the test of 12.17 is performed at not less than 125 °C. Where the metal earth pin is replaced by an Insulated Shutter Opening Device (ISOD), the requirements of clauses 22.2 and 23 also apply.		N/A
G.7.1	**United Kingdom** To the first paragraph the following is added: Equipment which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to BS 1363 by means of that flexible cable or cord shall be fitted with a 'standard plug' in accordance with the Plugs and Sockets etc. (Safety) Regulations 1994, Statutory Instrument 1994 No. 1768, unless exempted by those regulations. NOTE "Standard plug" is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.7.1	**Ireland** To the first paragraph the following is added: Apparatus which is fitted with a flexible cable or cord shall be provided with a plug in accordance with Statutory Instrument 525: 1997, “13 A Plugs and Conversion Adapters for Domestic Use Regulations: 1997. S.I. 525 provides for the recognition of a standard of another Member State which is equivalent to the relevant Irish Standard		N/A
G.7.2	**Ireland and United Kingdom** To the first paragraph the following is added: A power supply cord with a conductor of 1,25 mm^2 is allowed for equipment which is rated over 10 A and up to and including 13 A.		N/A
ZC	**ANNEX ZC, NATIONAL DEVIATIONS (EN)**		N/A
10.5.2	**Germany** The following requirement applies: For the operation of any cathode ray tube intended for the display of visual images operating at an acceleration voltage exceeding 40 kV, authorization is required, or application of type approval (Bauartzulassung) and marking. *Justification*: German ministerial decree against ionizing radiation (Röntgenverordnung), in force since 2002-07-01, implementing the European Directive 96/29/EURATOM. NOTE Contact address: Physikalisch-Technische Bundesanstalt, Bundesallee 100, D-38116 Braunschweig, Tel.: Int+49–531–592–6320, Internet: http://www.ptb.de		N/A
ZD	**IEC and CENELEC CODE DESIGNATIONS FOR FLEXIBLE CORDS**		N/A

IEC62368_1F ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
			N/A

Type of flexible cord	Code designations	
	IEC	CENELEC
PVC insulated cords		
Flat twin tinsel cord	60227 IEC 41	H03VH-Y
Light polyvinyl chloride sheathed flexible cord	60227 IEC 52	H03VV-F H03VVH2-F
Ordinary polyvinyl chloride sheathed flexible cord	60227 IEC 53	H05VV-F H05VVH2-F
Rubber insulated cords		
Braided cord	60245 IEC 51	H03RT-F
Ordinary tough rubber sheathed flexible cord	60245 IEC 53	H05RR-F
Ordinary polychloroprene sheathed flexible cord	60245 IEC 57	H05RN-F
Heavy polychloroprene sheathed flexible cord	60245 IEC 66	H07RN-F
Cords having high flexibility		
Rubber insulated and sheathed cord	60245 IEC 86	H03RR-H
Rubber insulated, crosslinked PVC sheathed cord	60245 IEC 87	H03RV4-H
Crosslinked PVC insulated and sheathed cord	60245 IEC 88	H03V4V4-H
Cords insulated and sheathed with halogen-free thermoplastic compounds		
Light halogen-free thermoplastic insulated and sheathed flexible cords		H03Z1Z1-F H03Z1Z1H2-F
Ordinary halogen-free thermoplastic insulated and sheathed flexible cords		H05Z1Z1-F H05Z1Z1H2-F

---End of Attachment 2---

Regulatory Information

FCC Information

Please take attention that changes or modification not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
FCC compliance: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Conditions
This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

EU Conformity Statement

This product and - if applicable - the supplied accessories too are marked with "CE" and comply therefore with the applicable harmonized European standards listed under the EMC Directive 2014/30/EU, LVD Directive 2014/35/EU, the RoHS Directive 2011/65/EU.

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

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

Industry Canada ICES-003 Compliance

This device meets the CAN ICES-3 (A)/NMB-3(A) standards requirements.

Symbol Conventions

The symbols that may be found in this document are defined as follows.

Symbol	Description
Danger	Indicates a hazardous situation which, if not avoided, will or could result in death or serious injury.
Caution	Indicates a potentially hazardous situation which, if not avoided, could result in equipment damage, data loss, performance degradation, or unexpected results.
Note	Provides additional information to emphasize or supplement important points of the main text.

Safety Instruction

- Proper configuration of all passwords and other security settings is the responsibility of the installer and/or end-user.
- In the use of the product, you must be in strict compliance with the electrical safety regulations of the nation and region.
- Firmly connect the plug to the power socket. Do not connect several devices to one power adapter. Power off the device before connecting and disconnecting accessories and peripherals.
- Shock hazard! Disconnect all power sources before maintenance.
- The equipment must be connected to an earthed mains socket-outlet.
- The socket-outlet shall be installed near the equipment and shall be easily accessible.
- ϟ indicates hazardous live and the external wiring connected to the terminals requires installation by an instructed person.
- Never place the equipment in an unstable location. The equipment may fall, causing serious personal injury or death.
- Input voltage should meet the SELV (Safety Extra Low Voltage) and the LPS (Limited Power Source) according to the IEC62368.
- High touch current! Connect to earth before connecting to the power supply.
- If smoke, odor or noise rise from the device, turn off the power at once and unplug the power cable, and then please contact the service center.
- Use the device in conjunction with an UPS, and use factory recommended HDD if possible.
- This product contains a coin/button cell battery. If the battery is swallowed, it can cause severe internal burns in just 2 hours and can lead to death.
- This equipment is not suitable for use in locations where children are likely to be present.
- CAUTION: Risk of explosion if the battery is replaced by an incorrect type.
- Improper replacement of the battery with an incorrect type may defeat a safeguard (for example, in the case of some lithium battery types).
- Do not dispose of the battery into fire or a hot oven, or mechanically crush or cut the battery, which may result in an explosion.

- Do not leave the battery in an extremely high temperature surrounding environment, which may result in an explosion or the leakage of flammable liquid or gas.
- Do not subject the battery to extremely low air pressure, which may result in an explosion or the leakage of flammable liquid or gas.
- Dispose of used batteries according to the instructions.
- Keep body parts away from fan blades and motors. Disconnect the power source during servicing.
- Keep body parts away from motors. Disconnect the power source during servicing.

Before connecting and operating your device, please be advised of the following tips:

- The device is designed for indoor use only. Install it in a well-ventilated, dust-free environment without liquids.
- Ensure recorder is properly secured to a rack or shelf. Major shocks or jolts to the recorder as a result of dropping it may cause damage to the sensitive electronics within the recorder.
- The equipment shall not be exposed to dripping or splashing and that no objects filled with liquids shall be placed on the equipment, such as vases.
- No naked flame sources, such as lighted candles, should be placed on the equipment.
- The ventilation should not be impeded by covering the ventilation openings with items, such as newspapers, table-cloths, curtains, etc. The openings shall never be blocked by placing the equipment on a bed, sofa, rug or other similar surface.
- For certain models, ensure correct wiring of the terminals for connection to an AC mains supply.
- For certain models, the equipment has been designed, when required, modified for connection to an IT power distribution system.
-  identifies the battery holder itself and identifies the positioning of the cell(s) inside the battery holder.
- + identifies the positive terminal(s) of equipment which is used with, or generates direct current. + identifies the negative terminal(s) of equipment which is used with, or generates direct current.
- Keep a minimum 200 mm (7.87 inch) distance around the equipment for sufficient ventilation.
- For certain models, ensure correct wiring of the terminals for connection to an AC mains supply.
- Use only power supplies listed in the user manual or user instruction.
- The USB port of the equipment is used for connecting to a mouse, keyboard, USB flash drive, or Wi-Fi dongle only.
- Use only power supplies listed in the user manual or user instruction.
- Do not touch the sharp edges or corners.
- When the device is running above 45 °C (113 °F), or its HDD temperature in S.M.A.R.T. exceeds the stated value, please ensure the device is running in a cool environment, or replace HDD(s) to make the HDD temperature in S.M.A.R.T. below the stated value.

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