

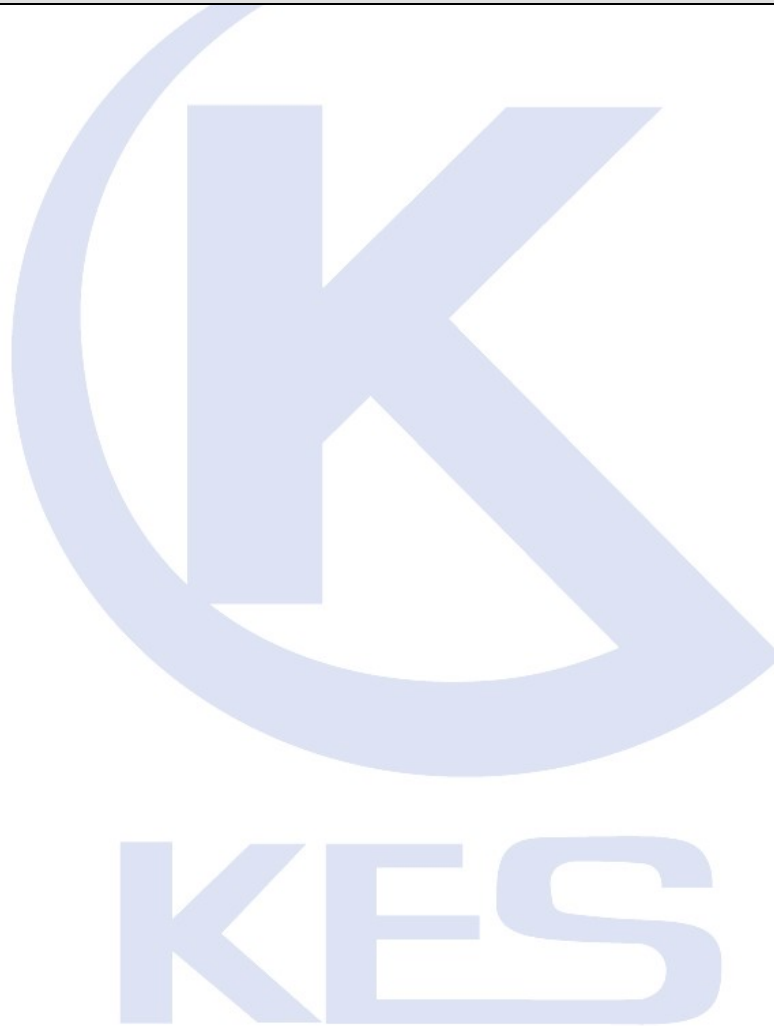


TEST REPORT IEC 62368-1 Audio/video, information and communication technology equipment Part 1: Safety requirements	
Report Number :	KES-SA-22T0086
Date of issue	2022-03-30
Total number of pages	121 (including list of attachments on the page 4)
Name of Testing Laboratory preparing the Report	KES Co., Ltd. 473-21, Gayeo-ro, Yeoju-si, Gyeonggi-do, 12658, Korea, Republic of
Applicant's name	Hanwha Techwin Co., Ltd.
Address	6, Pangyo-ro, 319Beon-gil, Bundang-gu, Seongnam-si, Gyeonggi-do, 13488, Republic of Korea
Test specification:	
Standard	EN IEC 62368-1:2020+A11:2020
Test procedure	-
Non-standard test method	N/A
TRF template used	IECEE OD-2020-F1:2020, Ed.1.3
Test Report Form No.	IEC62368_1E
Test Report Form(s) Originator :	UL(US)
Master TRF	Dated 2021-02-04
Copyright © 2021 IEC System of Conformity Assessment Schemes for Electrotechnical Equipment and Components (IECEE System). All rights reserved.	
This publication may be reproduced in whole or in part for non-commercial purposes as long as the IECEE is acknowledged as copyright owner and source of the material. IECEE takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context.	
General disclaimer:	
The test results presented in this report relate only to the object tested.	

This test report is not related to KS Q ISO/IEC 17025 and KOLAS.

This test report complies with the recognition standards of KOLAS and KS Q ISO/IEC 17025.
This report shall not be reproduced except in full, without the written approval of KES Co., Ltd.
The authenticity of the test report, contact shchoi@kes.co.kr

Test item description :	SSM Workstation
Trade Mark :	Hanwha Techwin Co., Ltd.
Manufacturer	Hanwha Techwin Co., Ltd. 6, Pangyo-ro, 319Beon-gil, Bundang-gu, Seongnam-si, Gyeonggi-do, 13488, Republic of Korea
Model/Type reference :	XWV-3010
Ratings :	4.2 A, 100-240 V~, 50/60 Hz

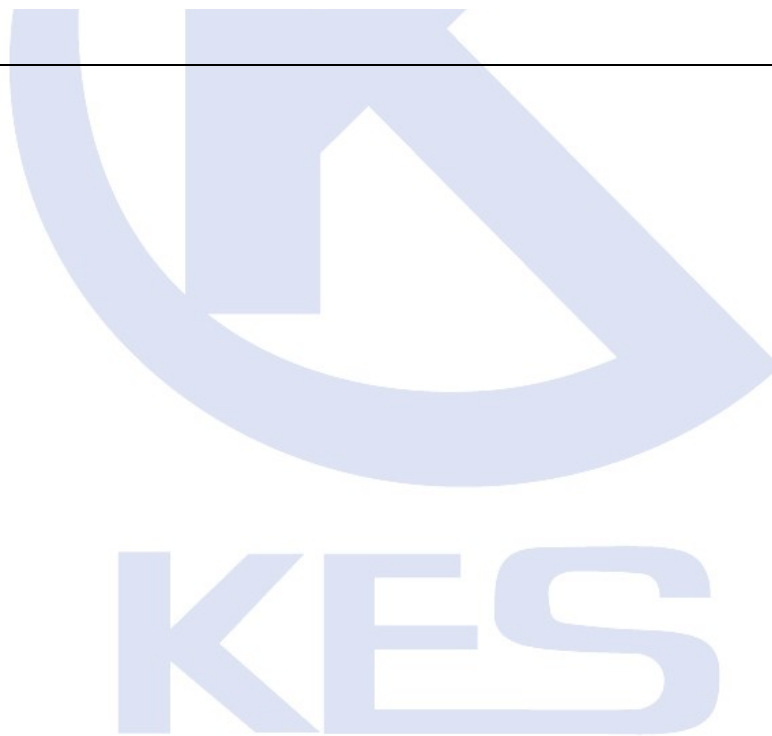


Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):		
☒	CB Testing Laboratory:	KES Co., Ltd.
Testing location/ address		473-21, Gayeo-ro, Yeosu-si, Gyeonggi-do, 12658, Korea Republic of
Tested by (name, function, signature)..... :		KangHan, Lee 
Approved by (name, function, signature) .. :		Jaekwan, Cha 
☐	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):	
1 European group differences and national differences	(24 pages)
2 Schematics & Block diagram	(2 page)
3 Photographs	(7 pages)
4 Instruction / Installation Manual	(2 page)
Summary of testing:	
Tests performed (name of test and test clause): All applicable test clauses	Testing location: KES Co., Ltd. 473-21, Gayeo-ro, Yeosu-si, Gyeonggi-do, 12658, Korea, Republic of
Summary of compliance with National Differences (List of countries addressed):	
☒ The product fulfils the requirements of IEC 62368-1:2018 and EN IEC 62368-1:2020+A11:2020. The European Group Differences and National Differences for EN IEC 62368-1:2020+A11:2020 is attached in end of this test report as appendix.	
Statement concerning the uncertainty of the measurement systems used for the tests (may be required by the product standard or client)	
☐ Internal procedure used for type testing through which traceability of the measuring uncertainty has been established: Procedure number, issue date and title: Calculations leading to the reported values are on file with the NCB and testing laboratory that conducted the testing.	
☒ Statement not required by the standard used for type testing	

Copy of marking plate:

The artwork below may be only a draft.



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: not directly connected to the mains	
Considered current rating of protective device	☒ 16 A;		
	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}	40 °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	☐ m	
Mass of equipment (kg)	4.94 kg		

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 : 2022-02-10 Date (s) of performance of tests : 2022-02-25 to 2022-03-25	
General remarks: "(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report. Throughout this report a ☐ comma / ☒ point is used as the decimal separator.	
Manufacturer's Declaration per sub-clause 4.2.5 of IEC 60950-1:	
The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided :	☐ Yes ☒ Not applicable
When differences exist; they shall be identified in the General product information section.	
Name and address of factory (ies) : Dell (China) Company Limited No. 2388 Jinshang Road, Information Photo-Electronic Park, Xiamen Torch Hi-tech Zone 361000, China	



General product information and other remarks:**Product Description**

The equipment is a class I SSM workstation, equipped with certified switching power supply. It consists of One Recognized component power supply, Plastic decorative part on front Metal enclosure, One RTC Coin Battery in Main Board, One DC Fan in Rear, one DC Fan at CPU, one DC Fan at SPS, one USB C type(3.2) port in Front, one USB 3.2 port in Front, two USB 2.0 ports in Front, four USB 3.2 port in Rear, two USB 2.0 ports in Rear, two PS/2 ports in Rear, four extended mini DisplayPort ports, one HDD, one SSD, one ODD, other signal port (RGB, DP, HDMI, LAN, Extended Network port) and numerous components mounted on PWB(mainboard) in metal enclosure.

The equipment has the following features:

1. Provided with metal enclosure is considered as fire enclosure and the front bezel is decorative part.
2. The side cover can be replaced by user, the inside area after removing side cover is considered as OPERATOR ACCESS AREA.
3. The equipment can be used in two operation orientation: Vertical and Horizontal.
4. All I/O ports are complied with the requirements of Annex Q.1.

All tests in this test report were conducted at SSM workstation with supplied PC NVR for recording (model, PRO-7410B6).

Continuous operation with the followings.

- with 1 HDD and 1 SSD
- with Extended Network port: (PC NVR for recording (model, PRO-7410B6))
- Front USB Type-C port: 0.9 A (1 EA) loaded
- Front USB 3.0/3.1/3.2 port: 0.9 A (1 EA) loaded
- Front USB 2.0 port: 0.5 A each (2 EA) loaded
- Rear USB 3.0/3.1/3.2 port: 0.9 A each (4 EA) loaded
- Rear USB 2.0 port: 0.5 A each keyboard and mouse connection
- Rear DisplayPort port: Monitor connection
- Rear extended mini DisplayPort port: Monitor connection

Use of components (Clause 4.1.2)

The EUT has connected to a certified class I Building-in Power Supply Unit according to IEC 62368-1: 2014 (Second Edition) by an Nemko (Type, HU300EPS-00 is Certif. No. NO114058 and Test report No. 404859). The certified PSU was evaluated according to IEC 62368-1: 2014 (Second Edition), therefore, added tests was evaluated as required tests in the EN IEC 62368-1:2020 +A11:2020 standard in this test report.

Clearance (Clause 5.4.2)

This equipment is intended for use at altitudes up to 2,000 m but certified switching power supplies are intended for use at altitudes up to 5,000 m.

Therefore, a multiplication factor of 1.48 for clearance was used and is satisfactory. (<5000m).

Instructions (Annex F.1)

Instructions / instructional safeguards / user's manual are only in English.

The information shall be given in a language acceptable to the country where the apparatus is intended to be sold.

Mains supply cord set (Annex G.7.1)

The equipment shall be provided with an approved AC mains cord set complying with the national regulations of the countries in which the appliance is to be sold.

General product information and other remarks (continued):**SPECIAL NATIONAL CONDITIONS (EN) (Annex ZB)**

For special national condition in Denmark, Finland, Norway and Sweden, CLASS I PLUGGABLE EQUIPMENT TYPE A intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment must be connected to an earthed mains socket-outlet.

The marking text in the applicable countries shall be as follows;

In Denmark: "Apparatets stikprop skal tilsluttes en stikkontakt med jord, som giver forbindelse til stikproppens jord."

In Finland: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan"

In Norway: "Apparatet må tilkoples jordet stikkontakt"

In Sweden: "Apparaten skall anslutas till jordat uttag"

Instructions and equipment marking related to safety is applied in the language that is acceptable in the country in which the equipment is to be sold.

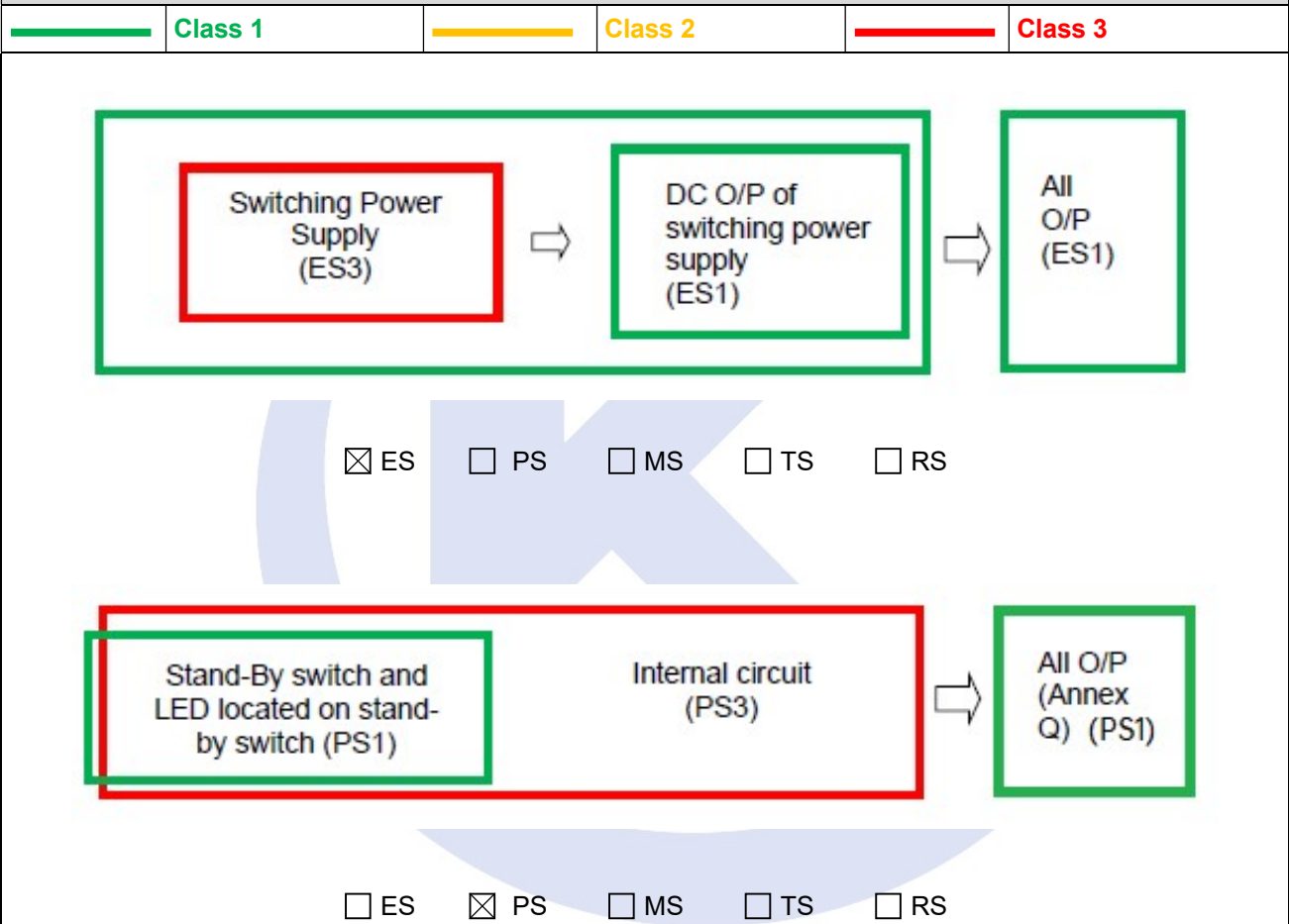
OVERVIEW OF ENERGY SOURCES AND SAFEGUARDS				
Clause	Possible Hazard			
5	Electrically-caused injury			
Class and Energy Source (e.g. ES3: Primary circuit)	Body Part (e.g. Ordinary)	Safeguards		
		B	S	R
ES3: PSU circuits before DC output circuits	Ordinary person	N/A	N/A	Metal enclosure and IEC 62368-1 certified PSU used
ES1: All internal circuits from the PSU output terminal	Ordinary person	N/A	N/A	N/A
ES1: All I/O outers	Ordinary person	N/A	N/A	N/A
6	Electrically-caused fire			
Class and Energy Source (e.g. PS2: 100 Watt circuit)	Material part (e.g. Printed board)	Safeguards		
		B	1 st S	2 nd S
PS3: Internal circuit	Entry of foreign objects	The user guide has suitable statements that persons are not expected to insert a foreign object into the equipment.	Complied with Annex P.2	N/A
PS3: Internal circuit	External enclosure	Safeguard are verified acc. to cl. 5.4.1.4, 6.3.1, 6.3.2, 9.3, B.2.6 and B.3.	Safeguards are verified according to clause 6.4.5, 6.4.6, 6.4.7 and 6.4.8	Fire enclosure to be provided.
PS3: Internal circuit	Internal combustible material	Safeguard are verified acc. to cl. 5.4.1.4, 6.3.1, 6.3.2, 9.3, B.2.6 and B.3.	Safeguards are verified according to clause 6.4.5, 6.4.6 and 6.4.7.	Fire enclosure to be provided.
PS3 (PIS)	Internal combustible material	Safeguard are verified acc. to cl. 5.4.1.4, 6.3.1, 6.3.2, 9.3, B.2.6 and B.3.	Safeguards are verified according to clause 6.4.5, 6.4.6 and 6.4.7.	Fire enclosure to be provided.

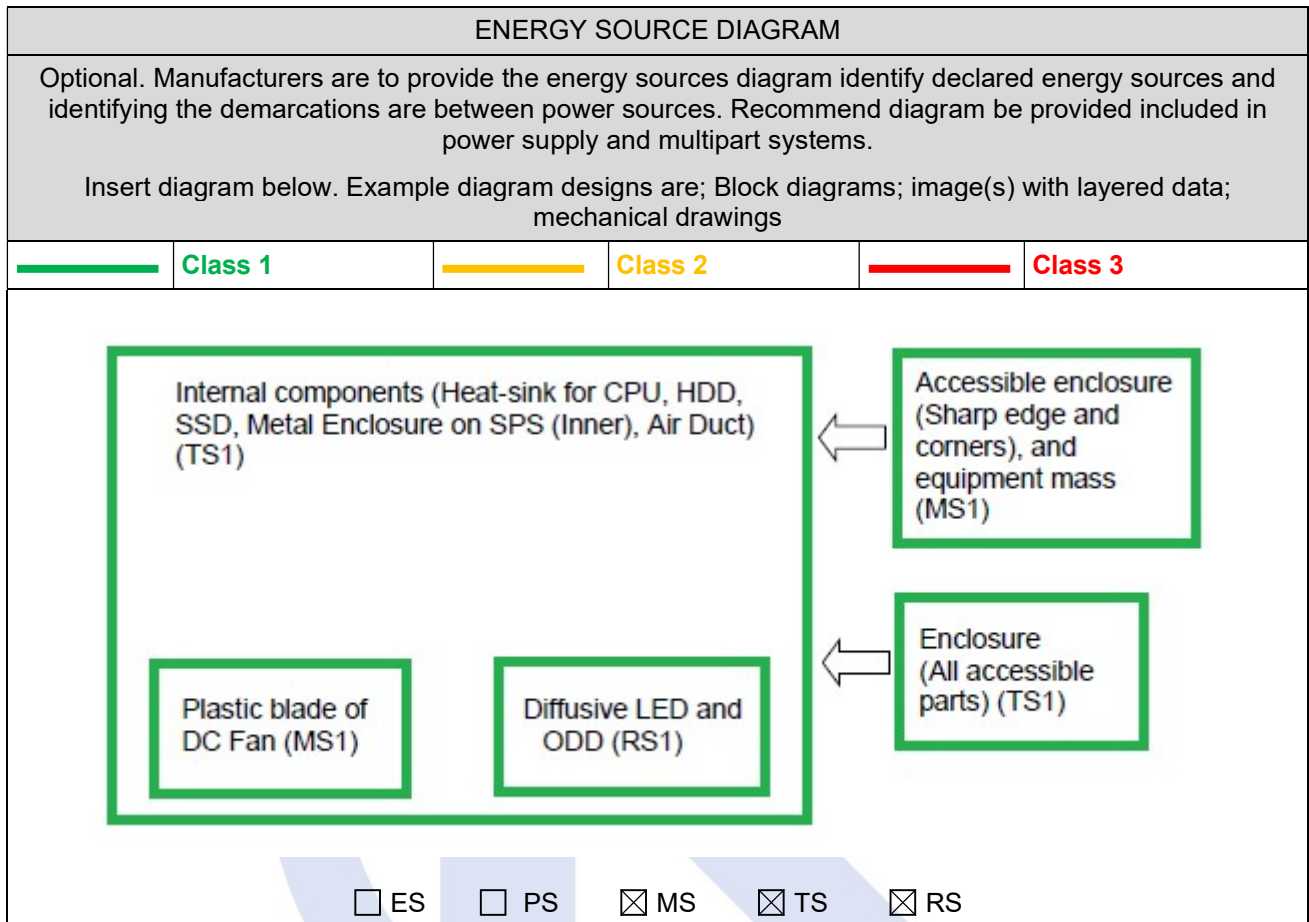
PS3: Internal circuit	Internal and external wire	Safeguard are verified according to cl. 5.4.1.4, 6.3.1, 6.3.2, 9.3, B.2.6 and B.3.	Cl. 6.5.1 Complied with 60695-11-21	N/A
PS1: Internal circuit	Stand-By switch and LED located on stand-by switch	Safeguard are verified acc. to cl. 5.4.1.4, 6.3.1, 6.3.2, 9.3, B.2.6 and B.3.	N/A	N/A
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 person	N/A	N/A	Compliance 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: Accessible enclosure (Sharp edges and corners) and equipment mass	Ordinary person	N/A	N/A	N/A
MS1: Plastic blade of DC Fan	Ordinary person	N/A	N/A	N/A
9	Thermal burn			
Class and Energy Source (e.g. TS1: Keyboard caps)	Body Part (e.g., Ordinary)	Safeguards		
		B	S	R
TS1: All accessible parts	Ordinary person	N/A	N/A	N/A
TS1: Internal components (Heat-sink for CPU, HDD, SSD, Metal enclosure on SPS (Inner), Air Duct)	Ordinary person	N/A	N/A	N/A
10	Radiation			
Class and Energy Source (e.g. RS1: PMP sound output)	Body Part (e.g., Ordinary)	Safeguards		
		B	S	R
RS1: Diffusive LED	Ordinary person	N/A	N/A	N/A
RS1: ODD	Ordinary person	N/A	N/A	N/A
Supplementary Information:				
“B” – Basic Safeguard; “S” – Supplementary Safeguard; “R” – Reinforced Safeguard				
See next pages of energy source diagram for additional details				

ENERGY SOURCE DIAGRAM

Optional. Manufacturers are to provide the energy sources diagram identify declared energy sources and identifying the demarcations are between power sources. Recommend diagram be provided included in power supply and multipart systems.

Insert diagram below. Example diagram designs are; Block diagrams; image(s) with layered data; mechanical drawings





IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
4	GENERAL REQUIREMENTS		P
4.1.1	Acceptance of materials, components and subassemblies	See appended table 4.1.2.	P
4.1.2	Use of components	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 EN/IEC 60950-1, EN/IEC 60065 or 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 EN IEC 62368-1.	P
4.1.3	Equipment design and construction	Equipment is adequately designed and constructed.	P
4.1.4	Specified ambient temperature for outdoor use (°C) :	Not outdoor equipment	N/A
4.1.5	Constructions and components not specifically covered	No such part.	N/A
4.1.8	Liquids and liquid filled components (LFC)	No Liquids and LFC in the equipment	N/A
4.1.15	Markings and instructions	(See Annex F)	P
4.4.3	Safeguard robustness	See below;	P
4.4.3.1	General	See below;	P
4.4.3.2	Steady force tests	(See clause T.3 and T.5)	P
4.4.3.3	Drop tests		N/A
4.4.3.4	Impact tests	(See clause T.6)	P
4.4.3.5	Internal accessible safeguard tests	(See clause T.3)	P
4.4.3.6	Glass impact tests	No glass	N/A
4.4.3.7	Glass fixation tests	No glass	N/A
	Glass impact test (1J)		N/A
	Push/pull test (10 N)		N/A
4.4.3.8	Thermoplastic material tests	(See clause T.8)	P
4.4.3.9	Air comprising a safeguard	(See clause T.5)	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.4.3.10	Accessibility, glass, safeguard effectiveness	All safeguards remain effective.	P
4.4.4	Displacement of a safeguard by an insulating liquid	No insulating liquid in the equipment	N/A
4.4.5	Safety interlocks	No safety interlocks in the equipment	N/A
4.5	Explosion		P
4.5.1	General	During normal / abnormal operating conditions and single fault conditions, explosion does not occur.	P
4.5.2	No explosion during normal/abnormal operating condition	(See Annex B.2 and B.3)	P
	No harm by explosion during single fault conditions	(See Annex B.4)	P
4.6	Fixing of conductors		N/A
	Fix conductors not to defeat a safeguard		N/A
	Compliance is checked by test.....:		N/A
4.7	Equipment for direct insertion into mains socket-outlets		N/A
4.7.2	Mains plug part complies with relevant standard ...:		N/A
4.7.3	Torque (Nm).....:		N/A
4.8	Equipment containing coin/button cell batteries		P
4.8.1	General	Children have not access to the battery, because the RTC battery is mounted in an embedded holder, requires release of computer enclosure, removal of enclosure, locate embedded holder and coin-cell battery, and to then release coin-cell battery from the embedded holder.	P
4.8.2	Instructional safeguard.....:	The RTC battery is not intended to be replaced by an ordinary person.	N/A
4.8.3	Battery compartment door/cover construction	No battery compartment door/cover	N/A
	Open torque test		N/A
4.8.4.2	Stress relief test		N/A
4.8.4.3	Battery replacement test		N/A
4.8.4.4	Drop test		N/A
4.8.4.5	Impact test		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.8.4.6	Crush test	Not such a hand-held remote control devices.	N/A
4.8.5	Compliance	No battery compartment door/cover	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	Considered, refer to separate switching PSU CB test report.	P

5	ELECTRICALLY-CAUSED INJURY		P
5.2	Classification and limits of electrical energy sources		P
5.2.2	ES1, ES2 and ES3 limits	See below;	P
5.2.2.2	Steady-state voltage and current limits	(See appended table 5.2)	P
5.2.2.3	Capacitance limits	Considered, refer to separate switching PSU CB test report.	P
5.2.2.4	Single pulse limits	No single pulses generated.	N/A
5.2.2.5	Limits for repetitive pulses	No repetitive pulses generated.	N/A
5.2.2.6	Ringing signals	Not used an analogue telephone network ringing signal in the equipment.	N/A
5.2.2.7	Audio signals		N/A
5.3	Protection against electrical energy sources		P
5.3.1	General Requirements for accessible parts to ordinary, instructed and skilled persons	Sufficient safeguard was provided between energy source and ordinary, instructed and skilled persons.	P
5.3.1 a)	Accessible ES1/ES2 derived from ES2/ES3 circuits	Reinforced safeguard was provided between energy source and ordinary, instructed and skilled persons. Refer to separate switching PSU CB test report.	P
5.3.1 b)	Skilled persons not unintentional contact ES3 bare conductors	PSUs will not be serviced.	N/A
5.3.2.1	Accessibility to electrical energy sources and safeguards	ES3 parts were not accessible to ordinary and instructed persons.	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Accessibility to outdoor equipment bare parts	Not intend to outdoor used.	N/A
5.3.2.2	Contact requirements	See below;	P
	Test with test probe from Annex V	Considered, refer to separate switching PSU CB test report.	—
5.3.2.2 a)	Air gap – electric strength test potential (V)		P
5.3.2.2 b)	Air gap – distance (mm)		P
5.3.2.3	Compliance		P
5.3.2.4	Terminals for connecting stripped wire	No such terminal.	N/A
5.4	Insulation materials and requirements		P
5.4.1.2	Properties of insulating material	Considered, refer to separate switching PSU CB test report.	P
5.4.1.3	Material is non-hygroscopic	See clause 5.4.8 and 5.4.9	P
5.4.1.4	Maximum operating temperature for insulating materials	Considered, refer to separate switching PSU CB test report.	P
5.4.1.5	Pollution degrees	Pollution degrees 2	P
5.4.1.5.2	Test for pollution degree 1 environment and for an insulating compound	Not required.	N/A
5.4.1.5.3	Thermal cycling test	Not required.	N/A
5.4.1.6	Insulation in transformers with varying dimensions		N/A
5.4.1.7	Insulation in circuits generating starting pulses		N/A
5.4.1.8	Determination of working voltage	Considered, refer to separate switching PSU CB test report.	P
5.4.1.9	Insulating surfaces		N/A
5.4.1.10	Thermoplastic parts on which conductive metallic parts are directly mounted	See below;	P
5.4.1.10.2	Vicat test.....		N/A
5.4.1.10.3	Ball pressure test	Considered, refer to separate switching PSU CB test report.	P
5.4.2	Clearances		P
5.4.2.1	General requirements	See below;	P
	Clearances in circuits connected to AC Mains, Alternative method	Considered, refer to separate switching PSU CB test report.	P
5.4.2.2	Procedure 1 for determining clearance	The highest voltage is temporary overvoltage, refer to separate switching PSU CB test report.	P
	Temporary overvoltage		—
5.4.2.3	Procedure 2 for determining clearance	Considered, refer to separate switching PSU CB test report.	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.2.3.2.2	a.c. mains transient voltage	2500 V _{peak}	—
5.4.2.3.2.3	d.c. mains transient voltage		—
5.4.2.3.2.4	External circuit transient voltage.....		—
5.4.2.3.2.5	Transient voltage determined by measurement		—
5.4.2.4	Determining the adequacy of a clearance using an electric strength test		N/A
5.4.2.5	Multiplication factors for clearances and test voltages	This equipment is intended for use at altitudes up to 2,000 m but certified switching power supplies are intended for use at altitudes up to 5,000 m. Therefore, a multiplication factor of 1.48 for clearance was used and is satisfactory. (<5000m).	P
5.4.2.6	Clearance measurement	Considered, refer to separate switching PSU CB test report.	P
5.4.3	Creepage distances	Considered, refer to separate switching PSU CB test report.	P
5.4.3.1	General		P
5.4.3.3	Material group	Material Group IIIb.	—
5.4.3.4	Creepage distances measurement	Considered, refer to separate switching PSU CB test report.	P
5.4.4	Solid insulation	See below;	P
5.4.4.1	General requirements	See below;	P
5.4.4.2	Minimum distance through insulation	Considered, refer to separate switching PSU CB test report.	P
5.4.4.3	Insulating compound forming solid insulation	Considered, refer to separate switching PSU CB test report.	P
5.4.4.4	Solid insulation in semiconductor devices	Considered, refer to separate switching PSU CB test report.	P
5.4.4.5	Insulating compound forming cemented joints	Considered, refer to separate switching PSU CB test report.	P
5.4.4.6	Thin sheet material	See below;	P
5.4.4.6.1	General requirements	See below;	P
5.4.4.6.2	Separable thin sheet material	Considered, refer to separate switching PSU CB test report.	P
	Number of layers (pcs)	Considered, refer to separate switching PSU CB test report.	P
5.4.4.6.3	Non-separable thin sheet material	Considered, refer to separate switching PSU CB test report.	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Number of layers (pcs)	Considered, refer to separate switching PSU CB test report.	P
5.4.4.6.4	Standard test procedure for non-separable thin sheet material		N/A
5.4.4.6.5	Mandrel test		N/A
5.4.4.7	Solid insulation in wound components	Considered, refer to separate switching PSU CB test report.	P
5.4.4.9	Solid insulation at frequencies >30 kHz, E_P , K_R , d , V_{PW} (V)	Certified switching PSU.	N/A
	Alternative by electric strength test, tested voltage (V), K_R		N/A
5.4.5	Antenna terminal insulation	No antenna terminal	N/A
5.4.5.1	General		N/A
5.4.5.2	Voltage surge test		N/A
5.4.5.3	Insulation resistance ($M\Omega$)		N/A
	Electric strength test		N/A
5.4.6	Insulation of internal wire as part of supplementary safeguard	Considered, refer to separate switching PSU CB test report.	P
5.4.7	Tests for semiconductor components and for cemented joints	Considered, refer to separate switching PSU CB test report.	P
5.4.8	Humidity conditioning	See below;	P
	Relative humidity (%), temperature ($^{\circ}C$), duration (h)	93 %, 30 $^{\circ}C$, 48 hr	—
5.4.9	Electric strength test	(See appended table 5.4.9)	P
5.4.9.1	Test procedure for type test of solid insulation	Test voltage based on transient voltages. (See appended table 5.4.9)	P
5.4.9.2	Test procedure for routine test		N/A
5.4.10	Safeguards against transient voltages from external circuits	No external circuits.	N/A
5.4.10.1	Parts and circuits separated from external circuits		N/A
5.4.10.2	Test methods		N/A
5.4.10.2.1	General		N/A
5.4.10.2.2	Impulse test		N/A
5.4.10.2.3	Steady-state test		N/A
5.4.10.3	Verification for insulation breakdown for impulse test		N/A
5.4.11	Separation between external circuits and earth	The equipment not intended to connect external circuits.	N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.11.1	Exceptions to separation between external circuits and earth		N/A
5.4.11.2	Requirements		N/A
	SPDs bridge separation between external circuit and earth		N/A
	Rated operating voltage U_{op} (V)..... :		—
	Nominal voltage U_{peak} (V)..... :		—
	Max increase due to variation ΔU_{sp} :		—
	Max increase due to ageing ΔU_{sa} :		—
5.4.11.3	Test method and compliance :		N/A
5.4.12	Insulating liquid	No insulating liquid in equipment	N/A
5.4.12.1	General requirements		N/A
5.4.12.2	Electric strength of an insulating liquid :		N/A
5.4.12.3	Compatibility of an insulating liquid :		N/A
5.4.12.4	Container for insulating liquid :		N/A
5.5	Components as safeguards		P
5.5.1	General		P
5.5.2	Capacitors and RC units		P
5.5.2.1	General requirement	Considered, refer to separate switching PSU CB test report.	P
5.5.2.2	Safeguards against capacitor discharge after disconnection of a connector :	Considered, refer to separate switching PSU CB test report.	P
5.5.3	Transformers	Considered, refer to separate switching PSU CB test report.	P
5.5.4	Optocouplers	Considered, refer to separate switching PSU CB test report.	P
5.5.5	Relays	Considered, refer to separate switching PSU CB test report.	P
5.5.6	Resistors	Considered, refer to separate switching PSU CB test report.	P
5.5.7	SPDs	Considered, refer to separate switching PSU CB test report.	P
5.5.8	Insulation between the mains and an external circuit consisting of a coaxial cable :		N/A
5.5.9	Safeguards for socket-outlets in outdoor equipment		N/A
	RCD rated residual operating current (mA) :		—
5.6	Protective conductor		P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.6.2	Requirement for protective conductors	Considered, refer to separate switching PSU CB test report.	P
5.6.2.1	General requirements		P
5.6.2.2	Colour of insulation	Considered, refer to separate switching PSU CB test report.	P
5.6.3	Requirement for protective earthing conductors	Considered, refer to separate switching PSU CB test report.	N/A
	Protective earthing conductor size (mm ²)		—
	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	See below;	P
5.6.4.1	Protective bonding conductors	Considered, refer to separate switching PSU CB test report.	P
	Protective bonding conductor size (mm ²).		—
5.6.4.2	Protective current rating (A).....	Considered, refer to separate switching PSU CB test report.	P
5.6.5	Terminals for protective conductors		N/A
5.6.5.1	Terminal size for connecting protective earthing conductors (mm).....		N/A
	Terminal size for connecting protective bonding conductors (mm)		N/A
5.6.5.2	Corrosion	Considered, refer to separate switching PSU CB test report.	P
5.6.6	Resistance of the protective bonding system		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	Not a permanently connected equipment.	N/A
5.6.8	Functional earthing		N/A
	Conductor size (mm ²).....		N/A
	Class II with functional earthing marking		N/A
	Appliance inlet cl & cr (mm).....		N/A
5.7	Prospective touch voltage, touch current and protective conductor current		P
5.7.2	Measuring devices and networks		P
5.7.2.1	Measurement of touch current	(See appended table 5.7.4)	P
5.7.2.2	Measurement of voltage	(See appended table 5.2)	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.7.3	Equipment set-up, supply connections and earth connections	Single mains connection, tests are performed with protective earthing connection disconnected.	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	The touch current does not exceed the 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	No external circuits.	N/A
5.7.7.1	Touch current from coaxial cables		N/A
5.7.7.2	Prospective touch voltage and touch current associated with paired conductor cables		N/A
5.7.8	Summation of touch currents from external circuits		N/A
	a) Equipment connected to earthed external circuits, current (mA)		N/A
	b) Equipment connected to unearthed external circuits, current (mA)		N/A
5.8	Backfeed safeguard in battery backed up supplies		N/A
	Mains terminal ES	No battery backed-up supplies.	N/A
	Air gap (mm).....		N/A

6	ELECTRICALLY- CAUSED FIRE		P
6.2	Classification of PS and PIS		P
6.2.2	Power source circuit classifications	See the ENERGY SOURCE IDENTIFICATION AND CLASSIFICATION TABLE for power source circuit classifications.	P
6.2.3	Classification of potential ignition sources	See below	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
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	Measured temperature < 300 °C. (See appended table 5.4.1.4, 9.3, B.1.5, B.2.6 and B.3)	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Combustible materials outside fire enclosure	Front bezel and rubber stand (Decorative parts), rated min. HB are located outside the fire enclosure.	P
6.4	Safeguards against fire under single fault conditions		P
6.4.1	Safeguard method	Control fire spread (refer to Cl. 6.4.5, 6.4.6 and 6.4.8) were used.	P
6.4.2	Reduction of the likelihood of ignition under single fault conditions in PS1 circuits		N/A
6.4.3	Reduction of the likelihood of ignition under single fault conditions in PS2 and PS3 circuits		N/A
6.4.3.1	Supplementary safeguards		N/A
6.4.3.2	Single Fault Conditions		N/A
	Special conditions for temperature limited by fuse		N/A
6.4.4	Control of fire spread in PS1 circuits	No safeguard needed.	P
6.4.5	Control of fire spread in PS2 circuits	See below;	P
6.4.5.2	Supplementary safeguards	Internal circuit and all output ports are PS1 and PS3 energy source.	N/A
6.4.6	Control of fire spread in PS3 circuits	All components in a PS3 are mounted on V-0 class material of printed boards and comply with the requirements of the relevant IEC or UL comp. standard and fire enclosure complies with 6.4.8. (See appended table 4.1.2)	P
6.4.7	Separation of combustible materials from a PIS	All PIS are within the fire enclosure and fire barrier.	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	See below;	P
6.4.8.2	Fire enclosure and fire barrier material properties	Metal enclosure is used for fire enclosure.	P
6.4.8.2.1	Requirements for a fire barrier		N/A
6.4.8.2.2	Requirements for a fire enclosure	The available power does not exceed 4000 W. Fire enclosure is made of metal.	P
6.4.8.3	Constructional requirements for a fire enclosure and a fire barrier		P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
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	See below;	P
	Openings dimensions (mm)..... :	<u>Plastic front bezel (considered as a mechanical enclosure);</u> Numerous rectangular openings, each max. 3.74 x 8.67 mm cover one area: 290 x 92.6 mm. (Baffled by internal metal enclosure) <u>Metal enclosure (considered as a fire enclosure);</u> [For all configuration]: <u>Top (Vertical direction) / Right (Horizontal direction):</u> No openings. <u>Left (Vertical direction) / Top (Horizontal direction):</u> No openings. <u>Right (Vertical direction) / Bottom (Horizontal direction):</u> No openings. <u>Bottom (Vertical direction) / Left (Horizontal direction):</u> No openings. <u>Front side (Vertical direction and Horizontal direction):</u> - Numerous openings, see the attached photo for details (the openings). No PIS are within 15 mm away from the openings.	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Openings dimensions (mm)..... : (Continued)	<u>Rear side (Vertical direction and Horizontal direction):</u> - Numerous square openings, each side max. 5.0 mm (diagonal 6.6 mm). No PIS are within 15 mm away from the openings. - Numerous rectangle openings, each side 5.2 mm max. x 14.6 mm max. No PIS are within 15 mm away from the openings. - Numerous irregular openings, each side 6.5 mm max. x 9.4 mm max. No PIS are within 15 mm away from the openings. - Numerous circular openings, each 3.46 mm max. in diameter [For all PSUs]: - Numerous square openings, each side 5.0 mm (diagonal 6.6 mm) max. All openings of inlet side were not located within fire cone area that control fire spread by distance.	P
6.4.8.3.4	Bottom openings and properties	No Bottom openings.	N/A
	Openings dimensions (mm)..... :		N/A
	Flammability tests for the bottom of a fire enclosure		N/A
	Instructional Safeguard		N/A
6.4.8.3.5	Side openings and properties	See below;	P
	Openings dimensions (mm)..... :	Refer to clause 6.4.8.3.3.	P
6.4.8.3.6	Integrity of a fire enclosure, condition met: a), b) or c)..... :	Adequate information provided in the user manual, refer to General product information.	P
6.4.8.4	Separation of a PIS from a fire enclosure and a fire barrier distance (mm) or flammability rating	Fire enclosure is made of metal.	N/A
6.4.9	Flammability of insulating liquid..... :	No insulating liquid in equipment	N/A
6.5	Internal and external wiring		P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
6.5.1	General requirements	Internal primary wires and secondary wires complied with IEC 60695-11-21. The test method described in IEC 60695-11-21 is considered equivalent to that test wiring materials which bearing VW-1 rating (according to UL 758).	P
6.5.2	Requirements for interconnection to building wiring	Equipment is not intended to provide power over the wiring system.	N/A
6.5.3	Internal wiring size (mm ²) for socket-outlets.....	No mains socket-outlets	—
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	No hazardous substances.	—
7.5	Use of instructional safeguards and instructions		N/A
	Instructional safeguard (ISO 7010).....	No hazardous substances.	—
7.6	Batteries and their protection circuits		P

8	MECHANICALLY-CAUSED INJURY		P
8.2	Mechanical energy source classifications		P
8.3	Safeguards against mechanical energy sources		P
8.4	Safeguards against parts with sharp edges and corners		P
8.4.1	Safeguards	No sharp edges.	P
	Instructional Safeguard		N/A
8.4.2	Sharp edges or corners		N/A
8.5	Safeguards against moving parts		P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
8.5.1	Fingers, jewellery, clothing, hair, etc., contact with MS2 or MS3 parts	No risk of personal injury from moving part (Fan). The following moving fan blades of DC fans classified as MS1. <u>For CPU Fan:</u> Shenzhen Dongweifeng / EFH-12J12WZ $\frac{4400}{15000} \times \frac{637.38}{2400} = 0.56 \leq 1$ - RPM: Max. 4400 RPM - K-factor: 637.38 <u>For System Fan:</u> AVC / DASA0820R2U $\frac{4950}{15000} + \frac{490.90}{2400} = 0.54 \leq 1$ - RPM: Max. 4950 RPM - K-factor: 490.90 After single fault condition (see appended table B.4), all fans speed didn't have speed up.	P
	MS2 or MS3 part required to be accessible for the function of the equipment		N/A
	Moving MS3 parts only accessible to skilled person		N/A
8.5.2	Instructional safeguard.....:	All DC fans are MS1, no needs the instructional safeguard.	N/A
8.5.4	Special categories of equipment containing moving parts	Not such equipment.	N/A
8.5.4.1	General		N/A
8.5.4.2	Equipment containing work cells with MS3 parts		N/A
8.5.4.2.1	Protection of persons in the work cell		N/A
8.5.4.2.2	Access protection override		N/A
8.5.4.2.2.1	Override system		N/A
8.5.4.2.2.2	Visual indicator		N/A
8.5.4.2.3	Emergency stop system		N/A
	Maximum stopping distance from the point of activation (m).....:		N/A
	Space between end point and nearest fixed mechanical part (mm)		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
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	No high-pressure lamps in the equipment.	N/A
	Explosion test.....		N/A
8.5.5.3	Glass particles dimensions (mm)		N/A
8.6	Stability of equipment		N/A
8.6.1	General	The equipment is classified as MS1. Safeguard is not required.	N/A
	Instructional safeguard.....		N/A
8.6.2	Static stability		N/A
8.6.2.2	Static stability test.....		N/A
8.6.2.3	Downward force test		N/A
8.6.3	Relocation stability		N/A
	Wheels diameter (mm)		—
	Tilt test		N/A
8.6.4	Glass slide test		N/A
8.6.5	Horizontal force test		N/A
8.7	Equipment mounted to wall, ceiling or other structure		N/A
8.7.1	Mount means type	The equipment does not intend to be mounted to a wall or ceiling.	N/A
8.7.2	Test methods		N/A
	Test 1, additional downwards force (N).....		N/A
	Test 2, number of attachment points and test force (N).....		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Test 3 Nominal diameter (mm) and applied torque (Nm).....:		N/A
8.8	Handles strength		N/A
8.8.1	General	No handles.	N/A
8.8.2	Handle strength test		N/A
	Number of handles.....:		—
	Force applied (N)		—
8.9	Wheels or casters attachment requirements		N/A
8.9.2	Pull test	No wheels or casters in the equipment.	N/A
8.10	Carts, stands and similar carriers		N/A
8.10.1	General	No carts, stands and similar carriers in the equipment.	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		N/A
8.10.5	Mechanical stability		N/A
	Force applied (N)		—
8.10.6	Thermoplastic temperature stability		N/A
8.11	Mounting means for slide-rail mounted equipment (SRME)		N/A
8.11.1	General	The equipment is not intended for rack mounted equipment.	N/A
8.11.2	Requirements for slide rails		N/A
	Instructional Safeguard		N/A
8.11.3	Mechanical strength test		N/A
8.11.3.1	Downward force test, force (N) applied.....:		N/A
8.11.3.2	Lateral push force test		N/A
8.11.3.3	Integrity of slide rail end stops		N/A
8.11.4	Compliance		N/A
8.12	Telescoping or rod antennas		N/A
	Button/ball diameter (mm)	No telescoping or rod antennas in the equipment.	—

9	THERMAL BURN INJURY	P
9.2	Thermal energy source classifications	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
9.3	Touch temperature limits		P
9.3.1	Touch temperatures of accessible parts	(See appended tables 9.3)	P
9.3.2	Test method and compliance	(See appended tables 5.4.1.4, 9.3, B.1.5, B.2.6 and B.3 and B.4)	P
9.4	Safeguards against thermal energy sources		P
9.5	Requirements for safeguards		P
9.5.1	Equipment safeguard	Enclosure provided to limit the transfer of thermal energy of internal parts under normal operating conditions and abnormal operating conditions.	P
9.5.2	Instructional safeguard.....	Instructional safeguard is not required.	N/A
9.6	Requirements for wireless power transmitters		N/A
9.6.1	General	Not applicable.	N/A
9.6.2	Specification of the foreign objects		N/A
9.6.3	Test method and compliance		N/A

10	RADIATION		P
10.2	Radiation energy source classification		P
10.2.1	General classification	See below;	P
	Lasers	RS1: ODD Laser radiation classification according to IEC 60825-1. Class 1 Laser Product.	—
	Lamps and lamp systems.....	RS1: Diffusive LED.	—
	Image projectors		—
	X-Ray.....		—
	Personal music player		—
10.3	Safeguards against laser radiation		P
	The standard(s) equipment containing laser(s) comply	Laser radiation classification according to IEC 60825-1. Class 1 Laser Product.	P
10.4	Safeguards against optical radiation from lamps and lamp systems (including LED types)		N/A
10.4.1	General requirements	Low power indicative LED of display and indicator only, RS1	N/A
	Instructional safeguard provided for accessible		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	radiation level needs to exceed		
	Risk group marking and location		N/A
	Information for safe operation and installation		N/A
10.4.2	Requirements for enclosures	No UV radiation.	N/A
	UV radiation exposure		N/A
10.4.3	Instructional safeguard		N/A
10.5	Safeguards against X-radiation		N/A
10.5.1	Requirements	No X-radiation.	N/A
	Instructional safeguard for skilled persons		—
10.5.3	Maximum radiation (pA/kg).....		—
10.6	Safeguards against acoustic energy sources		N/A
10.6.1	General	Not personal music player.	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

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
B	NORMAL OPERATING CONDITION TESTS, ABNORMAL OPERATING CONDITION TESTS AND SINGLE FAULT CONDITION TESTS		P
B.1	General		P
B.1.5	Temperature measurement conditions	(See appended table B.1.5)	P
B.2	Normal operating conditions		P
B.2.1	General requirements..... :	(See Test Item Particulars and appended test tables)	P
	Audio Amplifiers and equipment with audio amplifiers	No audio amplifier.	N/A
B.2.3	Supply voltage and tolerances	Tolerance is taken as +10 % / -10 % of rated input voltage in this test report. (264 V / 90 V)	P
B.2.5	Input test..... :	(See appended table B.2.5)	P
B.3	Simulated abnormal operating conditions		P
B.3.1	General	See below;	P
B.3.2	Covering of ventilation openings	(See appended table B.3)	P
	Instructional safeguard		N/A
B.3.3	DC mains polarity test	AC mains supplied.	N/A
B.3.4	Setting of voltage selector	No voltage selector.	N/A
B.3.5	Maximum load at output terminals	(See appended table B.3)	P
B.3.6	Reverse battery polarity	Considered, see annex M.3.	P
B.3.7	Audio amplifier abnormal operating conditions	No audio amplifier.	N/A
B.3.8	Safeguards functional during and after abnormal operating conditions	During an abnormal operating condition, all safeguards remain effective. After restoration of normal operating conditions, all safeguards comply with applicable requirements.	P
B.4	Simulated single fault conditions		P
B.4.1	General	See below;	P
B.4.2	Temperature controlling device	No temperature controlling device.	N/A
B.4.3	Blocked motor test	(See appended table B.4)	P
B.4.4	Functional insulation	See below;	P
B.4.4.1	Short circuit of clearances for functional insulation	Considered, refer to separate switching PSU CB test report.	P
B.4.4.2	Short circuit of creepage distances for functional insulation	Considered, refer to separate switching PSU CB test report.	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
B.4.4.3	Short circuit of functional insulation on coated printed boards	No coated printed board in the equipment.	N/A
B.4.5	Short-circuit and interruption of electrodes in tubes and semiconductors	Considered, refer to separate switching PSU CB test report.	P
B.4.6	Short circuit or disconnection of passive components	Considered, refer to separate switching PSU CB test report.	P
B.4.7	Continuous operation of components	No component intended for short-time operation or intermittent operation.	N/A
B.4.8	Compliance during and after single fault conditions	During and after single fault conditions, accessible parts does not exceed the relevant energy class and no flame and ignition inside the equipment.	P
B.4.9	Battery charging and discharging under single fault conditions	(See appended table M.3)	P
C	UV RADIATION		N/A
C.1	Protection of materials in equipment from UV radiation		N/A
C.1.2	Requirements	The equipment does not produce significant UV radiation.	N/A
C.1.3	Test method		N/A
C.2	UV light conditioning test		N/A
C.2.1	Test apparatus.....	The equipment does not produce significant UV radiation.	N/A
C.2.2	Mounting of test samples		N/A
C.2.3	Carbon-arc light-exposure test		N/A
C.2.4	Xenon-arc light-exposure test		N/A
D	TEST GENERATORS		N/A
D.1	Impulse test generators		N/A
D.2	Antenna interface test generator		N/A
D.3	Electronic pulse generator		N/A
E	TEST CONDITIONS FOR EQUIPMENT CONTAINING AUDIO AMPLIFIERS		N/A
E.1	Electrical energy source classification for audio signals		N/A
	Maximum non-clipped output power (W).....	No audio signals.	—
	Rated load impedance (Ω)		—
	Open-circuit output voltage (V).....		—
	Instructional safeguard		—

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
E.2	Audio amplifier normal operating conditions		N/A
	Audio signal source type		—
	Audio output power (W).....		—
	Audio output voltage (V)		—
	Rated load impedance (Ω)		—
	Requirements for temperature measurement		N/A
E.3	Audio amplifier abnormal operating conditions		N/A
F	EQUIPMENT MARKINGS, INSTRUCTIONS, AND INSTRUCTIONAL SAFEGUARDS		P
F.1	General		P
	Language	English.	—
F.2	Letter symbols and graphical symbols		P
F.2.1	Letter symbols according to IEC60027-1	Used letter symbols according to IEC 60027-1 in label and user manual.	P
F.2.2	Graphic symbols according to IEC, ISO or manufacturer specific	Used graphic symbols according to IEC, ISO standard.	P
F.3	Equipment markings		P
F.3.1	Equipment marking locations	The equipment markings are located on the outside surface of the equipment.	P
F.3.2	Equipment identification markings	See below;	P
F.3.2.1	Manufacturer identification	Hanwha Techwin Co., Ltd.	P
F.3.2.2	Model identification	XWV-3010	P
F.3.3	Equipment rating markings	See below;	P
F.3.3.1	Equipment with direct connection to mains	(See Annex F.3.3.3 to F.3.3.6)	P
F.3.3.2	Equipment without direct connection to mains	Direct connection to mains.	N/A
F.3.3.3	Nature of the supply voltage.....	The symbol (IEC 60417-1-5032) is used for AC mains.	P
F.3.3.4	Rated voltage	100-240 V~	P
F.3.3.5	Rated frequency	50/60 Hz	P
F.3.3.6	Rated current or rated power.....	4.2 A	P
F.3.3.7	Equipment with multiple supply connections	Single supply connection.	N/A
F.3.4	Voltage setting device	No voltage setting device. Auto ranging used.	N/A
F.3.5	Terminals and operating devices	See below;	N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
F.3.5.1	Mains appliance outlet and socket-outlet markings	No mains appliance outlet and socket-outlet in the equipment.	N/A
F.3.5.2	Switch position identification marking	A "standby" symbol is marked near the front power button and power indicator (IEC 60417-1 No. 5009).	P
F.3.5.3	Replacement fuse identification and rating markings	Considered, refer to separate switching PSU CB test report.	P
	Instructional safeguards for neutral fuse	Considered, refer to separate switching PSU CB test report.	P
F.3.5.4	Replacement battery identification marking	The RTC battery can be replaced by the instructed person or skilled person. Refer to M.10.	P
F.3.5.5	Neutral conductor terminal	Appliance inlet used.	N/A
F.3.5.6	Terminal marking location	Appliance inlet used.	N/A
F.3.6	Equipment markings related to equipment classification	Considered, refer to separate switching PSU CB test report.	P
F.3.6.1	Class I equipment	Considered, refer to separate switching PSU CB test report.	P
F.3.6.1.1	Protective earthing conductor terminal	Considered, refer to separate switching PSU CB test report.	P
F.3.6.1.2	Protective bonding conductor terminals	Considered, refer to separate switching PSU CB test report.	P
F.3.6.2	Equipment class marking	Not Class II equipment.	N/A
F.3.6.3	Functional earthing terminal marking		N/A
F.3.7	Equipment IP rating marking	No IP rating marking	N/A
F.3.8	External power supply output marking	Not an external power supply.	N/A
F.3.9	Durability, legibility and permanence of marking	Marking comply with the requirements.	P
F.3.10	Test for permanence of markings	The marking withstands required tests.	P
F.4	Instructions		P
	a) Information prior to installation and initial use	Provided in user manual.	P
	b) Equipment for use in locations where children not likely to be present	The equipment is not intended for use in locations where children are not likely to be present.	N/A
	c) Instructions for installation and interconnection	The equipment is not intended to be fastened in place.	N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	d) Equipment intended for use only in restricted access area	Equipment is not intended for use in restricted access area.	N/A
	e) Equipment intended to be fastened in place	Equipment is not intended to be fastened in place.	N/A
	f) Instructions for audio equipment terminals	No such terminals which classified as ES3.	N/A
	g) Protective earthing used as a safeguard	Refer to General product information.	P
	h) Protective conductor current exceeding ES2 limits	Not exceeded ES2 limits.	N/A
	i) Graphic symbols used on equipment	Graphical symbols on are explained on the equipment.	P
	j) Permanently connected equipment not provided with all-pole mains switch	No permanently connected equipment.	N/A
	k) Replaceable components or modules providing safeguard function	Provided in user manual.	P
	l) Equipment containing insulating liquid	No insulating liquid in equipment.	N/A
	m) Installation instructions for outdoor equipment	No outdoor equipment.	N/A
F.5	Instructional safeguards		P
G	COMPONENTS		P
G.1	Switches		N/A
G.1.1	General	(See appended table 6.2.2) No switch is located in PS3 circuit.	N/A
G.1.2	Ratings, endurance, spacing, maximum load		N/A
G.1.3	Test method and compliance		N/A
G.2	Relays		P
G.2.1	Requirements	Considered, refer to separate switching PSU CB test report.	P
G.2.2	Overload test		N/A
G.2.3	Relay controlling connectors supplying power to other equipment		N/A
G.2.4	Test method and compliance		N/A
G.3	Protective devices		P
G.3.1	Thermal cut-offs	No thermal cut-offs.	N/A
	Thermal cut-outs separately approved according to IEC 60730 with conditions indicated in a) & b)		N/A
	Thermal cut-outs tested as part of the equipment as indicated in c)		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
G.3.1.2	Test method and compliance		N/A
G.3.2	Thermal links	No 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		N/A
G.3.3	PTC thermistors	Certified PTC used.	P
G.3.4	Overcurrent protection devices	Considered, refer to separate switching PSU CB test report.	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	No non-resettable devices in the equipment.	N/A
G.3.5.2	Single faults conditions..... :		N/A
G.4	Connectors		P
G.4.1	Spacings	Refer to separate switching PSU CB test report.	P
G.4.2	Mains connector configuration :	Refer to separate switching PSU CB test report.	P
G.4.3	Plug is shaped that insertion into mains socket-outlets or appliance coupler is unlikely	None of the output connectors can be inserted by the mains socket outlet or appliance inlet.	P
G.5	Wound components		P
G.5.1	Wire insulation in wound components	Considered, refer to separate switching PSU CB test report.	P
G.5.1.2	Protection against mechanical stress	Considered, refer to separate switching PSU CB test report.	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	No insulation breakdown		N/A
G.5.3	Transformers	Considered, refer to separate switching PSU CB test report.	P
G.5.3.1	Compliance method..... :	Considered, refer to separate switching PSU CB test report.	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Position		P
	Method of protection.....		P
G.5.3.2	Insulation	Considered, refer to separate switching PSU CB test report.	P
	Protection from displacement of windings.....		—
G.5.3.3	Transformer overload tests	Considered, refer to separate switching PSU CB test report.	P
G.5.3.3.1	Test conditions		P
G.5.3.3.2	Winding temperatures		P
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.5.3.4.7	Routine test		N/A
G.5.4	Motors		P
G.5.4.1	General requirements	DC fan in the PSU, refer to separate switching PSU CB test report and motors in cert. DC fans, HDD and ODD. (See appended table 4.1.2).	P
G.5.4.2	Motor overload test conditions		N/A
G.5.4.3	Running overload test		N/A
G.5.4.4.2	Locked-rotor overload test		N/A
	Test duration (days)		—
G.5.4.5	Running overload test for DC motors		N/A
G.5.4.5.2	Tested in the unit		N/A
G.5.4.5.3	Alternative method		N/A
G.5.4.6	Locked-rotor overload test for DC motors		N/A
G.5.4.6.2	Tested in the unit		N/A
	Maximum Temperature		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
G.5.4.6.3	Alternative method		N/A
G.5.4.7	Motors with capacitors		N/A
G.5.4.8	Three-phase motors		N/A
G.5.4.9	Series motors		N/A
	Operating voltage		—
G.6	Wire Insulation		P
G.6.1	General	Considered, refer to separate switching PSU CB test report.	P
G.6.2	Enamelled winding wire insulation	Considered, refer to separate switching PSU CB test report.	P
G.7	Mains supply cords		N/A
G.7.1	General requirements	No power cord provided, see General product information.	N/A
	Type.....		—
G.7.2	Cross sectional area (mm ² or AWG)		N/A
G.7.3	Cord anchorages and strain relief for non-detachable power supply cords		N/A
G.7.3.2	Cord strain relief		N/A
G.7.3.2.1	Requirements		N/A
	Strain relief test force (N).....		N/A
G.7.3.2.2	Strain relief mechanism failure		N/A
G.7.3.2.3	Cord sheath or jacket position, distance (mm)		N/A
G.7.3.2.4	Strain relief and cord anchorage material		N/A
G.7.4	Cord Entry		N/A
G.7.5	Non-detachable cord bend protection		N/A
G.7.5.1	Requirements		N/A
G.7.5.2	Test method and compliance		N/A
	Overall diameter or minor overall dimension, <i>D</i> (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

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
G.8.1	General requirements	Considered, refer to separate switching PSU CB test report.	P
G.8.2	Safeguards against fire		N/A
G.8.2.1	General		N/A
G.8.2.2	Varistor overload test		N/A
G.8.2.3	Temporary overvoltage test		N/A
G.9	Integrated circuit (IC) current limiters		P
G.9.1	Requirements	Certificated IC used. See appended table 4.1.2 for details.	P
	IC limiter output current (max. 5A)	Output current is limited max. 5 A	—
	Manufacturers' defined drift	Certificated IC used. See appended table 4.1.2 for details.	—
G.9.2	Test Program		N/A
G.9.3	Compliance		P
G.10	Resistors		P
G.10.1	General	Considered, refer to separate switching PSU CB test report.	P
G.10.2	Conditioning		N/A
G.10.3	Resistor test		N/A
G.10.4	Voltage surge test		N/A
G.10.5	Impulse test		N/A
G.10.6	Overload test		N/A
G.11	Capacitors and RC units		P
G.11.1	General requirements	Considered, refer to separate switching PSU CB test report.	P
G.11.2	Conditioning of capacitors and RC units		P
G.11.3	Rules for selecting capacitors		P
G.12	Optocouplers		P
	Optocouplers comply with IEC 60747-5-5 with specifics	Considered, refer to separate switching PSU CB test report.	P
	Type test voltage $V_{ini,a}$		—
	Routine test voltage, $V_{ini,b}$		—
G.13	Printed boards		P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
G.13.1	General requirements	Basic considered (ES3 side), primary and secondary circuits are not insulated by PCB layers.	P
G.13.2	Uncoated printed boards	Safeguard complied cl.5.4.2 & 5.4.3, refer to separate switching PSU CB test report.	P
G.13.3	Coated printed boards		N/A
G.13.4	Insulation between conductors on the same inner surface		N/A
G.13.5	Insulation between conductors on different surfaces		N/A
	Distance through insulation		N/A
	Number of insulation layers (pcs)		—
G.13.6	Tests on coated printed boards	No coated printed board in the equipment.	N/A
G.13.6.1	Sample preparation and preliminary inspection		N/A
G.13.6.2	Test method and compliance		N/A
G.14	Coating on components terminals		N/A
G.14.1	Requirements	No coatings in the equipment.	N/A
G.15	Pressurized liquid filled components		N/A
G.15.1	Requirements	The cooling heat pipe contains a very small amount of liquid. That is wholly sealed.	N/A
G.15.2	Test methods and compliance		N/A
G.15.2.1	Hydrostatic pressure test		N/A
G.15.2.2	Creep resistance test		N/A
G.15.2.3	Tubing and fittings compatibility test		N/A
G.15.2.4	Vibration test		N/A
G.15.2.5	Thermal cycling test		N/A
G.15.2.6	Force test		N/A
G.15.3	Compliance		N/A
G.16	IC including capacitor discharge function (ICX)		P
G.16.1	Condition for fault tested is not required	Refer to separate switching PSU CB test report.	P
	ICX with associated circuitry tested in equipment		P
	ICX tested separately		P
G.16.2	Tests		P
	Smallest capacitance and smallest resistance specified by ICX manufacturer for impulse test.....		—

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Mains voltage that impulses to be superimposed on :		—
	Largest capacitance and smallest resistance for ICX tested by itself for 10000 cycles test :		—
G.16.3	Capacitor discharge test..... :		N/A
H	CRITERIA FOR TELEPHONE RINGING SIGNALS		N/A
H.1	General		N/A
H.2	Method A		N/A
H.3	Method B		N/A
H.3.1	Ringling signal	Not used an analogue telephone network ringing signal in the equipment.	N/A
H.3.1.1	Frequency (Hz) :		—
H.3.1.2	Voltage (V) :		—
H.3.1.3	Cadence; time (s) and voltage (V) :		—
H.3.1.4	Single fault current (mA):..... :		—
H.3.2	Tripping device and monitoring voltage		N/A
H.3.2.1	Conditions for use of a tripping device or a monitoring voltage		N/A
H.3.2.2	Tripping device		N/A
H.3.2.3	Monitoring voltage (V) :		N/A
J	INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION		P
J.1	General		P
	Winding wire insulation..... :	Refer to separate switching PSU CB test report.	—
	Solid round winding wire, diameter (mm)..... :		N/A
	Solid square and rectangular (flatwise bending) winding wire, cross-sectional area (mm ²)..... :		N/A
J.2/J.3	Tests and Manufacturing		—
K	SAFETY INTERLOCKS		N/A
K.1	General requirements		N/A
	Instructional safeguard :	No such part.	N/A
K.2	Components of safety interlock safeguard mechanism		N/A
K.3	Inadvertent change of operating mode		N/A
K.4	Interlock safeguard override		N/A
K.5	Fail-safe		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
K.5.1	Under single fault condition		N/A
K.6	Mechanically operated safety interlocks		N/A
K.6.1	Endurance requirement		N/A
K.6.2	Test method and compliance		N/A
K.7	Interlock circuit isolation		N/A
K.7.1	Separation distance for contact gaps & interlock circuit elements		N/A
	In circuit connected to mains, separation distance for contact gaps (mm).....		N/A
	In circuit isolated from mains, separation distance for contact gaps (mm).....		N/A
	Electric strength test before and after the test of K.7.2		N/A
K.7.2	Overload test, Current (A)		N/A
K.7.3	Endurance test		N/A
K.7.4	Electric strength test		N/A
L	DISCONNECT DEVICES		P
L.1	General requirements	Appliance coupler will be served as disconnect devices. Also, Considered, refer to separate switching PSU CB test report.	P
L.2	Permanently connected equipment		N/A
L.3	Parts that remain energized	Complied with cl. 5.5.2.2, no additional guard or service manual needed.	N/A
L.4	Single-phase equipment	Considered, refer to separate switching PSU CB test report.	P
L.5	Three-phase equipment		N/A
L.6	Switches as disconnect devices	No used.	N/A
L.7	Plugs as disconnect devices	AC inlet is considered as disconnect devices.	N/A
L.8	Multiple power sources	Single power source.	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	RTC battery. (See appended table 4.1.2)	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
M.3	Protection circuits for batteries provided within the equipment	See below;	P
M.3.1	Requirements	See below;	P
M.3.2	Test method	See below;	P
	Overcharging of a rechargeable battery		N/A
	Excessive discharging		N/A
	Unintentional charging of a non-rechargeable battery	Considered, see appended table M.3 for RTC battery.	P
	Reverse charging of a rechargeable battery		N/A
M.3.3	Compliance	(See appended table M.3)	P
M.4	Additional safeguards for equipment containing a portable secondary lithium battery		N/A
M.4.1	General	No secondary lithium battery used.	N/A
M.4.2	Charging safeguards		N/A
M.4.2.1	Requirements		N/A
M.4.2.2	Compliance..... :		N/A
M.4.3	Fire enclosure..... :		N/A
M.4.4	Drop test of equipment containing a secondary lithium battery		N/A
M.4.4.2	Preparation and procedure for the drop test		N/A
M.4.4.3	Drop, Voltage on reference and dropped batteries (V); voltage difference during 24 h period (%): :		N/A
M.4.4.4	Check of the charge/discharge function		N/A
M.4.4.5	Charge / discharge cycle test		N/A
M.4.4.6	Compliance		N/A
M.5	Risk of burn due to short-circuit during carrying		N/A
M.5.1	Requirement		N/A
M.5.2	Test method and compliance		N/A
M.6	Safeguards against short-circuits		P
M.6.1	External and internal faults	(See appended table B.3, B.4)	P
M.6.2	Compliance	No explode or emit molten material during the short-circuit test.	P
M.7	Risk of explosion from lead acid and NiCd batteries		N/A
M.7.1	Ventilation preventing explosive gas concentration	No lead acid and NiCd batteries in the equipment.	N/A
	Calculated hydrogen generation rate :		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
M.7.2	Test method and compliance		N/A
	Minimum air flow rate, Q (m ³ /h)..... :		N/A
M.7.3	Ventilation tests		N/A
M.7.3.1	General		N/A
M.7.3.2	Ventilation test – alternative 1		N/A
	Hydrogen gas concentration (%)..... :		N/A
M.7.3.3	Ventilation test – alternative 2		N/A
	Obtained hydrogen generation rate..... :		N/A
M.7.3.4	Ventilation test – alternative 3		N/A
	Hydrogen gas concentration (%)..... :		N/A
M.7.4	Marking :		N/A
M.8	Protection against internal ignition from external spark sources of batteries with aqueous electrolyte		N/A
M.8.1	General		N/A
M.8.2	Test method		N/A
M.8.2.1	General		N/A
M.8.2.2	Estimation of hypothetical volume V_z (m ³ /s) :		—
M.8.2.3	Correction factors :		—
M.8.2.4	Calculation of distance d (mm) :		—
M.9	Preventing electrolyte spillage		N/A
M.9.1	Protection from electrolyte spillage		N/A
M.9.2	Tray for preventing electrolyte spillage		N/A
M.10	Instructions to prevent reasonably foreseeable misuse	See below;	P
	Instructional safeguard :	The product information guide has the cautions, refer to Attachment 4.	P
N	ELECTROCHEMICAL POTENTIALS		P
	Material(s) used :	Metal alloy, refer to separate switching PSU CB test report.	—
O	MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES		P
	Value of X (mm)..... :	Considered.	—
P	SAFEGUARDS AGAINST CONDUCTIVE OBJECTS		P
P.1	General	See below clauses;	P
P.2	Safeguards against entry or consequences of entry of a foreign object		P
P.2.1	General	See below;	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
P.2.2	Safeguards against entry of a foreign object	See below;	P
	Location and Dimensions (mm) :	Refer to Cl. 6.4.8.3.3 and 6.4.8.3.4.	—
P.2.3	Safeguards against the consequences of entry of a foreign object	See below;	P
P.2.3.1	Safeguard requirements	For openings are not complied with P.2.2; No PIS, ES3 and PS3 located with 5 degree projection area of the openings.	P
	The ES3 and PS3 keep-out volume in Figure P.3 not applicable to transportable equipment	Not such a transportable equipment.	N/A
	Transportable equipment with metalized plastic parts..... :	Not such a transportable equipment.	N/A
P.2.3.2	Consequence of entry test..... :		N/A
P.3	Safeguards against spillage of internal liquids		N/A
P.3.1	General	The cooling heat pipe contains a very small amount of liquid. That is wholly sealed and the liquid is non-flammable.	N/A
P.3.2	Determination of spillage consequences		N/A
P.3.3	Spillage safeguards		N/A
P.3.4	Compliance		N/A
P.4	Metallized coatings and adhesives securing parts		N/A
P.4.1	General	No metallized coatings and adhesives securing parts	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	See below;	P
Q.1.1	Requirements	See below;	P
	a) Inherently limited output	COM, RJ45 and all audio ports are inherently limited, only for signal transmission.	P
	b) Impedance limited output	VGA ports are limited by impedance.	P
	c) Regulating network limited output	No such parts used.	N/A
	d) Overcurrent protective device limited output	No such parts used.	N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	e) IC current limiter complying with G.9	USB port, PS/2, and Display port are limited by power distribution switch (IC current limiter).	P
Q.1.2	Test method and compliance	(See appended table Q.1)	P
	Current rating of overcurrent protective device (A)		N/A
Q.2	Test for external circuits – paired conductor cable	The equipment is not supplying power to an external circuit 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		N/A
S	TESTS FOR RESISTANCE TO HEAT AND FIRE		P
S.1	Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W		N/A
	Samples, material		—
	Wall thickness (mm)		—
	Conditioning (°C)		—
	Test flame according to IEC 60695-11-5 with conditions as set out		N/A
	- Material not consumed completely		N/A
	- Material extinguishes within 30s		N/A
	- No burning of layer or wrapping tissue		N/A
S.2	Flammability test for fire enclosure and fire barrier integrity		N/A
	Samples, material		—
	Wall thickness (mm)		—
	Conditioning (°C)		—
S.3	Flammability test for the bottom of a fire enclosure		N/A
S.3.1	Mounting of samples		N/A
S.3.2	Test method and compliance		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Mounting of samples		—
	Wall thickness (mm)		—
S.4	Flammability classification of materials		N/A
S.5	Flammability test for fire enclosure materials of equipment with a steady state power exceeding 4 000 W		N/A
	Samples, material		—
	Wall thickness (mm)		—
	Conditioning (°C)		—
T	MECHANICAL STRENGTH TESTS		P
T.1	General		P
T.2	Steady force test, 10 N		N/A
T.3	Steady force test, 30 N	(See appended table T.3)	P
T.4	Steady force test, 100 N		N/A
T.5	Steady force test, 250 N	(See appended table T.5)	P
T.6	Enclosure impact test	(See appended table T.6)	P
	Fall test		P
	Swing test		P
T.7	Drop test		N/A
T.8	Stress relief test.....	(See appended table T.8)	P
T.9	Glass Impact Test	No parts made of glass.	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)	No telescoping or rod antennas in the equipment.	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 :	No cathode ray tube in the equipment.	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	See below;	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
V.1.2	Surfaces and openings tested with jointed test probes	Does not accessed to the hazardous energy source.	P
V.1.3	Openings tested with straight unjointed test probes	Does not accessed to the hazardous energy source.	P
V.1.4	Plugs, jacks, connectors tested with blunt probe	Does not accessed to the hazardous energy source.	P
V.1.5	Slot openings tested with wedge probe	Does not accessed to the hazardous energy source.	P
V.1.6	Terminals tested with rigid test wire	Does not accessed to the hazardous energy source.	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		N/A
Y	CONSTRUCTION REQUIREMENTS FOR OUTDOOR ENCLOSURES		N/A
Y.1	General	Not outdoor equipment	N/A
Y.2	Resistance to UV radiation		N/A
Y.3	Resistance to corrosion		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		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		N/A
	Alternative test methods		N/A
Y.4.4	Compression test		N/A
Y.4.5	Oil resistance		N/A
Y.4.6	Securing means		N/A
Y.5	Protection of equipment within an outdoor enclosure		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

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
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
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 :		N/A



IEC 62368-1							
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 (Vdc)	I (mA _{pk}) 1), 2)	Type 3)	Additional Info 4)	
264 Vac	PSUs circuits before DC output	Normal	—	—	—	—	ES3 *)
		Abnormal	—	—	—	—	
		Single fault – SC/OC	—	—	—	—	
264 Vac	PSUs all DC output	Normal	—	—	—	—	ES1 *)
		Abnormal	—	—	—	—	
		Single fault – SC/OC	—	—	—	—	
264 Vac	USB Type-C (USB3S3)	Normal	5.17	—	DC	—	ES1
		Abnormal: Ventilation openings blocked	5.17	—	DC	—	
		Abnormal: Output overload	5.17	—	DC	—	
		Single fault – CPU fan stalled	5.17	—	DC	—	
		Single fault – SPS fan stalled	5.17	—	DC	—	
		Single fault – R2602 (pin 1 - 2) SC	5.17	—	DC	—	
		Single fault – R2609 (pin 1 - 2) SC	5.17	—	DC	—	
264 Vac	USB 2.0/3.0/3.1/3.2 (USB3F1)	Normal	5.16	—	DC	—	ES1
		Abnormal: Ventilation openings blocked	5.16	—	DC	—	
		Abnormal: Output overload	5.16	—	DC	—	
		Single fault – CPU fan stalled	5.16	—	DC	—	
		Single fault – SPS fan stalled	5.16	—	DC	—	
		Single fault – R2602 (pin 1 - 2) SC	5.16	—	DC	—	

IEC 62368-1							
Clause	Requirement + Test			Result - Remark			Verdict
		Single fault – R2609 (pin 1 - 2) SC	5.16	—	DC	—	
264 Vac	USB 2.0 (USB2F1)	Normal	5.16	—	DC	—	ES1
		Abnormal: Ventilation openings blocked	5.16	—	DC	—	
		Abnormal: Output overload	5.16	—	DC	—	
		Single fault – CPU fan stalled	5.16	—	DC	—	
		Single fault – SPS fan stalled	5.16	—	DC	—	
		Single fault – R2602 (pin 1 - 2) SC	5.16	—	DC	—	
		Single fault – R2609 (pin 1 - 2) SC	5.16	—	DC	—	
264 Vac	AUDIO (UAJ1)	Normal	0	—	DC	—	ES1
		Abnormal: Ventilation openings blocked	0	—	DC	—	
		Abnormal: Output overload	0	—	DC	—	
		Single fault – CPU fan stalled	0	—	DC	—	
		Single fault – SPS fan stalled	0	—	DC	—	
		Single fault – R2602 (pin 1 - 2) SC	0	—	DC	—	
		Single fault – R2609 (pin 1 - 2) SC	0	—	DC	—	
264 Vac	AUDIO (AUDIO1)	Normal	0	—	DC	—	ES1
		Abnormal: Ventilation openings blocked	0	—	DC	—	
		Abnormal: Output overload	0	—	DC	—	
		Single fault – CPU fan stalled	0	—	DC	—	

IEC 62368-1							
Clause	Requirement + Test			Result - Remark			Verdict
		Single fault – SPS fan stalled	0	—	DC	—	
		Single fault – R2602 (pin 1 - 2) SC	0	—	DC	—	
		Single fault – R2609 (pin 1 - 2) SC	0	—	DC	—	
264 Vac	Display port (DP1)	Normal	3.35	—	DC	—	ES1
		Abnormal: Ventilation openings blocked	3.35	—	DC	—	
		Abnormal: Output overload	3.35	—	DC	—	
		Single fault – CPU fan stalled	3.35	—	DC	—	
		Single fault – SPS fan stalled	3.35	—	DC	—	
		Single fault – R2602 (pin 1 - 2) SC	3.35	—	DC	—	
		Single fault – R2609 (pin 1 - 2) SC	3.35	—	DC	—	
264 Vac	Display port (DP2)	Normal	3.35	—	DC	—	ES1
		Abnormal: Ventilation openings blocked	3.35	—	DC	—	
		Abnormal: Output overload	3.35	—	DC	—	
		Single fault – CPU fan stalled	3.35	—	DC	—	
		Single fault – SPS fan stalled	3.35	—	DC	—	
		Single fault – R2602 (pin 1 - 2) SC	3.35	—	DC	—	
		Single fault – R2609 (pin 1 - 2) SC	3.35	—	DC	—	
264 Vac	PS/2 port (KYBD_MOUSE)	Normal	5.11	—	DC	—	ES1
		Abnormal: Ventilation openings blocked	5.11	—	DC	—	

IEC 62368-1							
Clause	Requirement + Test			Result - Remark			Verdict
		Abnormal: Output overload	5.11	—	DC	—	
		Single fault – CPU fan stalled	5.11	—	DC	—	
		Single fault – SPS fan stalled	5.11	—	DC	—	
		Single fault – R2602 (pin 1 - 2) SC	5.11	—	DC	—	
		Single fault – R2609 (pin 1 - 2) SC	5.11	—	DC	—	
264 Vac	COM port (COM1)	Normal	0	—	DC	—	ES1
		Abnormal: Ventilation openings blocked	0	—	DC	—	
		Abnormal: Output overload	0	—	DC	—	
		Single fault – CPU fan stalled	0	—	DC	—	
		Single fault – SPS fan stalled	0	—	DC	—	
		Single fault – R2602 (pin 1 - 2) SC	0	—	DC	—	
		Single fault – R2609 (pin 1 - 2) SC	0	—	DC	—	
264 Vac	USB 3.0/3.1/3.2 (USB3R1)	Normal	5.17	—	DC	—	ES1
		Abnormal: Ventilation openings blocked	5.17	—	DC	—	
		Abnormal: Output overload	5.17	—	DC	—	
		Single fault – CPU fan stalled	5.17	—	DC	—	
		Single fault – SPS fan stalled	5.17	—	DC	—	
		Single fault – R2602 (pin 1 - 2) SC	5.17	—	DC	—	
		Single fault – R2609 (pin 1 - 2) SC	5.17	—	DC	—	

IEC 62368-1							
Clause	Requirement + Test			Result - Remark			Verdict
264 Vac	USB 3.0/3.1/3.2 (USB3R2)	Normal	5.17	—	DC	—	ES1
		Abnormal: Ventilation openings blocked	5.17	—	DC	—	
		Abnormal: Output overload	5.17	—	DC	—	
		Single fault – CPU fan stalled	5.17	—	DC	—	
		Single fault – SPS fan stalled	5.17	—	DC	—	
		Single fault – R2602 (pin 1 - 2) SC	5.17	—	DC	—	
		Single fault – R2609 (pin 1 - 2) SC	5.17	—	DC	—	
264 Vac	USB2.0 (RJ45R1)	Normal	5.17	—	DC	—	ES1
		Abnormal: Ventilation openings blocked	5.17	—	DC	—	
		Abnormal: Output overload	5.17	—	DC	—	
		Single fault – CPU fan stalled	5.17	—	DC	—	
		Single fault – SPS fan stalled	5.17	—	DC	—	
		Single fault – R2602 (pin 1 - 2) SC	5.17	—	DC	—	
		Single fault – R2609 (pin 1 - 2) SC	5.17	—	DC	—	
264 Vac	RJ45 (RJ45R1)	Normal	0	—	DC	—	ES1
		Abnormal: Ventilation openings blocked	0	—	DC	—	
		Abnormal: Output overload	0	—	DC	—	
		Single fault – CPU fan stalled	0	—	DC	—	
		Single fault – SPS fan stalled	0	—	DC	—	

IEC 62368-1							
Clause	Requirement + Test			Result - Remark			Verdict
		Single fault – R2602 (pin 1 - 2) SC	0	—	DC	—	
		Single fault – R2609 (pin 1 - 2) SC	0	—	DC	—	
264 Vac	HDMI port	Normal	5.17	—	DC	—	ES1
		Abnormal: Ventilation openings blocked	5.17	—	DC	—	
		Abnormal: Output overload	5.17	—	DC	—	
		Single fault – CPU fan stalled	5.17	—	DC	—	
		Single fault – SPS fan stalled	5.17	—	DC	—	
		Single fault – R2602 (pin 1 - 2) SC	5.17	—	DC	—	
		Single fault – R2609 (pin 1 - 2) SC	5.17	—	DC	—	
264 Vac	mini-Display port	Normal	3.36	—	DC	—	ES1
		Abnormal: Ventilation openings blocked	3.36	—	DC	—	
		Abnormal: Output overload	3.36	—	DC	—	
		Single fault – CPU fan stalled	3.36	—	DC	—	
		Single fault – SPS fan stalled	3.36	—	DC	—	
		Single fault – R2602 (pin 1 - 2) SC	3.36	—	DC	—	
		Single fault – R2609 (pin 1 - 2) SC	3.36	—	DC	—	

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
Supplementary information: 1) Current is not measured because voltage is fulfilled by the limits. 2) Measured highest touch current, specified in Figure 4, IEC 60990:1999. 3) Type: Steady state (SS), Capacitance (CP), Single pulse (SP), Repetitive pulses (RP), etc. 4) Additional Info: Frequency, Pulse duration, Pulse off time, Capacitance value, etc. SC=Short Circuit, OC=Open Circuit *) Refer to separated PSU CB test report.			

5.4.1.8	TABLE: Working voltage measurement *)				P
Location	RMS voltage (V)	Peak voltage (V)	Frequency (Hz)	Comments	
-	-	-	-	-	
Supplementary information: *) Refer to separated PSU CB test report.					

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: *) Refer to separated PSU CB test report.					

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

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. (Hz) ¹⁾	Required cl (mm)	cl (mm)	E.S. (V) ²⁾	Required cr (mm)	cr (mm)
-	-	-	-	-	-	-	-	-
Supplementary information: Equipment is checked with 10 N force test on all possible components. Provide Material Group IIIb. ¹⁾ Only for frequency above 30 kHz ²⁾ Complete Electric Strength voltage (E.S. (V) when 5.4.2.4 applied) *) Refer to separated PSU CB test report.								

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 separated PSU CB test report.					

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

5.4.9 TABLE: Electric strength tests				P
Test voltage applied between:	Voltage shape (Surge, Impulse, AC, DC, etc.)	Test voltage (V)	Breakdown Yes / No	
Basic / Supplementary insulation				
Primary - Earth for all PSUs	DC	2500	No	
Double / Reinforced insulation				
Primary – Output terminal for all PSUs	DC	4000	No	
Supplementary information:				

IEC 62368-1					
Clause	Requirement + Test			Result - Remark	Verdict
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
-	-	-	-	-	-
Supplementary information: X-capacitors installed for testing: Not used for bleeding resistor and ICX. 1) Normal operating condition (e.g., normal operation, or open fuse), SC= short circuit, OC= open circuit *) Refer to separated PSU CB test report.					

5.6.6	TABLE: Resistance of protective conductors and terminations				P
Location	Test current (A)	Duration (min)	Voltage drop (V)	Resistance (Ω)	
From appliance inlet (Switching power supply) to Metal chassis	32	2	0.51	0.016	
Supplementary information:					

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

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)	
Line/Neutral – Signal connector	Normal	264	84 mVpk	0.17 mApk	60	ES1 *)
	Abnormal (Block opening)	264	84 mVpk	0.17 mApk	60	
	Abnormal (Fan locked)	264	84 mVpk	0.17 mApk	60	
	Fault (Single fault condition of basic safeguard: loss of protective earth connection)	264	44 mVpk	0.09 mApk	60	ES1 (limit ES2) **)
Supplementary information: Abbreviation: SC= short circuit; OC= open circuit. *) Current is measured using the measuring network specified in Figure 4, IEC 60990:1999, and according clause 5.2.1.1 the current not exceed the ES1 limit. **) Current is measured using the measuring network specified in Figure 5, IEC 60990:1999, and according clause 5.2.1.1 the current not exceed the ES2 limit.						

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

5.7.5	TABLE: Earthed accessible conductive part			P
Supply voltage (V)..... :	264 V			—
Phase(s) :	[X] Single Phase; [] Three Phase: [] Delta [] Wye			
Power Distribution System :	☒ TN ☐ TT ☐ IT			
Location	Fault Condition No in IEC 60990 clause 6.2.2	Touch current (mA)	Comment	
Accessible Output port	Fault 1, Fig 5, N	U3: 74 mV, U3/500: 0.15 mA	No exceed the ES2 limit	
	Fault 1, Fig 5, R	U3: 76 mV, U3/500: 0.15 mA	No exceed the ES2 limit	
Accessible Metal chassis	Fault 1, Fig 5, N	U3: 74 mV, U3/500: 0.15 mA	No exceed the ES2 limit	
	Fault 1, Fig 5, R	U3: 76 mV, U3/500: 0.15 mA	No exceed the ES2 limit	
Supplementary Information:				

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



IEC 62368-1						
Clause	Requirement + Test			Result - Remark		Verdict
6.2.2	TABLE: Power source circuit classifications					P
Location	Operating and fault condition	Voltage (Vdc)	Current (A)	Max. Power (W) ¹⁾	Time (S)	PS class
All circuits except for all I/O ports	N/A	N/A	N/A	N/A	N/A	PS3
All output ports *)	Normal	-	-	-	-	PS1 (comply with Annex Q)
Stand-by switch (PWR_SW)	Load Fault	2.93	0.01	0.0293	3	PS1
	Power source fault, (R6401 SC)	0	0	0	3	PS1
LED on Stand-by switch (PWR_SW)	Load Fault	2.39	0.01	0.0239	3	PS1
	Power source fault, (R6401 SC)	0	0	0	3	PS1
Supplementary information:						
Abbreviation: SC= short circuit; OC= open circuit						
¹⁾ Measured after 3 s for PS1 and measured after 5 s for PS2 and PS3.						
*) Refer to the appended table Annex Q.1 for details.						

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	
-	-	-	-	-	
Supplementary information:					
Arcing PIS is considered to exist in PS2 and PS3					
*) Refer to separated PSU CB test report.					
**) The internal open circuit voltage does not exceed 50 V (peak) AC or DC.					

IEC 62368-1			
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 circuits	N/A	N/A	Yes *)
Supplementary information: Abbreviation: SC= short circuit; OC= open circuit *) All circuit is resistive PIS and covered by fire enclosure and openings comply with requirement. It has been declared a Resistive PIS, no tests.			

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

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

IEC 62368-1			
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)..... :		90 V, 50 Hz / Horizontal	90 V, 60 Hz / Horizontal
Ambient temperature during test T_{amb} (°C)..... :		23.3	23.8
Maximum measured temperature T of part/at: ⁵⁾		T (°C) ¹⁾	
LF101 coil (SPS)		55.3	55.2
LF102 coil (SPS)		57.5	57.7
T0 coil (SPS)		57.1	57.1
T0 coil (SPS)		53.8	53.9
T0 coil (SPS)		59.7	60.0
L401 coil		46.5	46.7
Enclosure on SPS (Metal)		45.6	45.2
PCB near CPU		54.1	53.6
CPU Heat-sink body		51.1	50.4
CPU Fan body		50.1	49.3
PCB near HS1		52.1	51.3
HS1 Heat-sink body		55.1	54.3
RTC battery body		46.5	46.1
System Fan body		40.5	40.4
HDD body		41.6	41.5
SSD PCB body		50.0	49.4
Extended Network port PCB body		50.9	50.8
PCB near U502 (Graphic card)		63.4	63.0
Maximum measured temperature T of part/at: ⁶⁾		T (°C) ²⁾	
AC Inlet body ⁴⁾		33.0	33.0
Enclosure outside near HDMI port (Metal) ⁴⁾		31.2	31.7
Enclosure outside near CPU (Metal) ⁴⁾		32.0	31.6
Enclosure outside near SPS (Metal) ⁴⁾		28.8	28.8
Enclosure outside near USB port (Plastic) ⁴⁾		26.7	26.4
Power button ³⁾		26.8	26.4
Supplementary information:			
Maximum ambient temperature (T_{ma}): 40 °C			
¹⁾ Calculated value for T_{ma} (Measured value – T_{amb} + T_{ma})			
²⁾ Calculated value for T_{amb} : 25 °C			

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
³⁾ External surfaces touched occasionally for very short period (> 1 s and < 10 s). ⁴⁾ Surface that need not be touched to operate the equipment (< 1s). ⁵⁾ Parts inside the equipment. ⁶⁾ Parts outside the equipment.			

5.4.1.4, 9.3, B.1.5, B.2.6	TABLE: Temperature measurements		P
Supply voltage (V)..... :	264 V, 50 Hz / Horizontal	264 V, 60 Hz / Horizontal	—
Ambient temperature during test T_{amb} (°C)..... :	21.8	21.5	—
Maximum measured temperature T of part/at: ⁵⁾	T (°C) ¹⁾		Allowed T_{max} (°C)
LF101 coil (SPS)	51.6	52.0	120
LF102 coil (SPS)	51.7	52.2	120
T0 coil (SPS)	55.5	55.9	110
T0 coil (SPS)	52.4	52.9	110
T0 coil (SPS)	52.8	53.3	110
L401 coil	45.3	45.8	110
Enclosure on SPS (Metal)	45.1	45.5	-
PCB near CPU	54.8	55.4	130
CPU Heat-sink body	52.4	52.9	-
CPU Fan body	51.2	51.5	-
PCB near HS1	52.6	53.1	130
HS1 Heat-sink body	55.6	56.1	-
RTC battery body	45.2	45.5	-
System Fan body	40.2	40.4	-
HDD body	42.0	42.3	-
SSD PCB body	50.6	51.0	130
Extended Network port PCB body	53.3	53.6	130
PCB near U502 (Graphic card)	65.6	65.9	130
Maximum measured temperature T of part/at: ⁶⁾	T (°C) ²⁾		Allowed T_{max} (°C)
AC Inlet body ⁴⁾	31.7	32.1	94
Enclosure outside near HDMI port (Metal) ⁴⁾	32.4	32.9	70
Enclosure outside near CPU (Metal) ⁴⁾	31.8	32.5	70
Enclosure outside near SPS (Metal) ⁴⁾	28.2	28.5	70
Enclosure outside near USB port (Plastic) ⁴⁾	27.0	27.3	94
Power button ³⁾	26.7	27.1	77

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
Supplementary information: Maximum ambient temperature (T_{ma}): 40 °C 1) Calculated value for T_{ma} (Measured value – T_{amb} + T_{ma}) 2) Calculated value for T_{amb}: 25 °C 3) External surfaces touched occasionally for very short period (> 1 s and < 10 s). 4) Surface that need not be touched to operate the equipment (< 1s). 5) Parts inside the equipment. 6) Parts outside the equipment.			

5.4.1.4, 9.3, B.1.5, B.2.6	TABLE: Temperature measurements		P
Supply voltage (V)..... :	90 V, 50 Hz / Vertical	90 V, 60 Hz / Vertical	—
Ambient temperature during test T_{amb} (°C)..... :	23.0	22.3	—
Maximum measured temperature T of part/at: ⁵⁾	T (°C) ¹⁾		Allowed T_{max} (°C)
LF101 coil (SPS)	55.6	55.0	120
LF102 coil (SPS)	57.7	57.2	120
T0 coil (SPS)	57.7	57.1	110
T0 coil (SPS)	54.3	53.6	110
T0 coil (SPS)	59.6	58.9	110
L401 coil	46.6	45.9	110
Enclosure on SPS (Metal)	45.7	45.1	-
PCB near CPU	55.0	54.6	130
CPU Heat-sink body	52.8	52.5	-
CPU Fan body	51.4	51.1	-
PCB near HS1	52.7	52.1	130
HS1 Heat-sink body	55.8	55.3	-
RTC battery body	44.8	44.3	-
System Fan body	41.2	40.3	-
HDD body	42.4	42.3	-
SSD PCB body	50.8	50.3	130
Extended Network port PCB body	52.9	52.8	130
PCB near U502 (Graphic card)	64.9	64.5	130
Maximum measured temperature T of part/at: ⁶⁾	T (°C) ²⁾		Allowed T_{max} (°C)
AC Inlet body ⁴⁾	33.5	33.0	94

IEC 62368-1				
Clause	Requirement + Test	Result - Remark		Verdict
	Enclosure outside near HDMI port (Metal) ⁴⁾	31.6	31.3	70
	Enclosure outside near CPU (Metal) ⁴⁾	31.6	31.3	70
	Enclosure outside near SPS (Metal) ⁴⁾	29.2	28.7	70
	Enclosure outside near USB port (Plastic) ⁴⁾	27.0	26.9	94
	Power button ³⁾	26.9	26.3	77
Supplementary information:				
Maximum ambient temperature (T _{ma}): 40 °C				
¹⁾ Calculated value for T _{ma} (Measured value – Tamb + Tma)				
²⁾ Calculated value for T _{amb} : 25 °C				
³⁾ External surfaces touched occasionally for very short period (> 1 s and < 10 s).				
⁴⁾ Surface that need not be touched to operate the equipment (< 1s).				
⁵⁾ Parts inside the equipment.				
⁶⁾ Parts outside the equipment.				

5.4.1.4, 9.3, B.1.5, B.2.6	TABLE: Temperature measurements		P
Supply voltage (V)..... :	264 V, 50 Hz / Vertical	264 V, 60 Hz / Vertical	—
Ambient temperature during test T_{amb} (°C)..... :	21.9	22.6	—
Maximum measured temperature T of part/at: ⁵⁾	T (°C) ¹⁾		Allowed T_{max} (°C)
LF101 coil (SPS)	50.9	50.8	120
LF102 coil (SPS)	51.4	51.2	120
T0 coil (SPS)	55.9	55.8	110
T0 coil (SPS)	52.8	52.7	110
T0 coil (SPS)	52.7	52.7	110
L401 coil	45.2	45.0	110
Enclosure on SPS (Metal)	44.7	44.4	-
PCB near CPU	54.6	54.2	130
CPU Heat-sink body	52.5	52.1	-
CPU Fan body	51.2	50.8	-
PCB near HS1	52.0	51.6	130
HS1 Heat-sink body	55.2	54.8	-
RTC battery body	43.9	44.0	-
System Fan body	40.4	40.0	-
HDD body	42.3	42.0	-
SSD PCB body	50.3	49.7	130

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Extended Network port PCB body	52.9 52.1	130
	PCB near U502 (Graphic card)	64.7 64.1	130
	Maximum measured temperature T of part/at: ⁶⁾	$T (^{\circ}\text{C})$ ²⁾	Allowed $T_{\text{max}} (^{\circ}\text{C})$
	AC Inlet body ⁴⁾	31.6 31.3	94
	Enclosure outside near HDMI port (Metal) ⁴⁾	32.1 31.3	70
	Enclosure outside near CPU (Metal) ⁴⁾	31.5 30.0	70
	Enclosure outside near SPS (Metal) ⁴⁾	28.2 27.9	70
	Enclosure outside near USB port (Plastic) ⁴⁾	26.9 26.4	94
	Power button ³⁾	26.5 25.9	77
Supplementary information: Maximum ambient temperature (T_{ma}): 40 °C ¹⁾ Calculated value for T_{ma} (Measured value – T_{amb} + T_{ma}) ²⁾ Calculated value for T_{amb}: 25 °C ³⁾ External surfaces touched occasionally for very short period (> 1 s and < 10 s). ⁴⁾ Surface that need not be touched to operate the equipment (< 1s). ⁵⁾ Parts inside the equipment. ⁶⁾ Parts outside the equipment.			

IEC 62368-1									
Clause		Requirement + Test				Result - Remark		Verdict	
B.2.5		TABLE: Input test							P
U (Vdc)	Hz	I (A)	I rated (A)	P (W)	P rated (W)	Fuse No	I fuse (A)	Condition/status	
90	50	0.84	-	73.9	-	F101	0.84	Maximum normal load	
100	50	0.77	4.2	74.7	-	F101	0.77	Maximum normal load	
240	50	0.33	4.2	72.6	-	F101	0.33	Maximum normal load	
264	50	0.35	-	75.3	-	F101	0.35	Maximum normal load	
90	60	0.82	-	72.3	-	F101	0.82	Maximum normal load	
100	60	0.77	4.2	75.1	-	F101	0.77	Maximum normal load	
240	60	0.35	4.2	73.4	-	F101	0.35	Maximum normal load	
264	60	0.36	-	74.6	-	F101	0.36	Maximum normal load	
Supplementary information:									

IEC 62368-1						
Clause	Requirement + Test				Result - Remark	
B.3, B.4	TABLE: Abnormal operating and fault condition tests					P
Ambient temperature T_{amb} (°C)					20.0 to 25.0	—
Power source for EUT: Manufacturer, model/type, outputrating....					(See appended table 4.1.2)	—
Component No.	Condition	Supply voltage (V)	Test time	Fuse no.	Fuse current (A)	Observation
Ventilation opening (All)	Blocked	264 V	2 h 06 min	F101	0.38	NO, FI stabilised at 0.38 A, ND, NC, NT, NH. See Note A) in the next page for measured temperature.
CPU Fan	Stalled	264 V	50 min	F101	0.10	Unit shutdown after 50 min, FI stabilised at 0.10 A, ND, NC, NT, NH.
SPS Fan	Stalled	264 V	2 h 46 min	F101	0.36	NO, FI stabilised at 0.36 A, ND, NC, NT, NH. See Note B) in the next page for measured temperature.
System Fan	Stalled	264 V	1 h 30 min	F101	0.36	NO, FI stabilised at 0.36 A, ND, NC, NT, NH. See Note C) in the next page for measured temperature.
USB Type-C (USB3S3)	Overload	264 V	1 h 35 min	F101	0.40	Max. available current is 2.9 A, FI stabilised at 0.40 A, ND, NC, NT, NH. See Note D) in the next page for measured temperature.
USB 2.0/3.0/3.1/3.2 (USB3F1)	Overload	264 V	1 h 11 min	F101	0.40	Max. available current is 3.1 A, FI stabilised at 0.40 A, ND, NC, NT, NH. See Note E) in the next page for measured temperature.
USB 2.0 (USB2F1)	Overload	264 V	2 h 18 min	F101	0.40	Max. available current is 2.3 A, FI stabilised at 0.40 A, ND, NC, NT, NH. See Note F) in the next page for measured temperature.
Supplementary information: NO=Normal operation, FI: Fault Input Current, UI=Unit shut down immediately, SC=Short circuit, OC=Open circuit, ND=No component damaged, NB= No indication of dielectric breakdown, NC= Cheesecloth remained intact, NT= Tissue paper remained intact, NH=No hazard.						

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

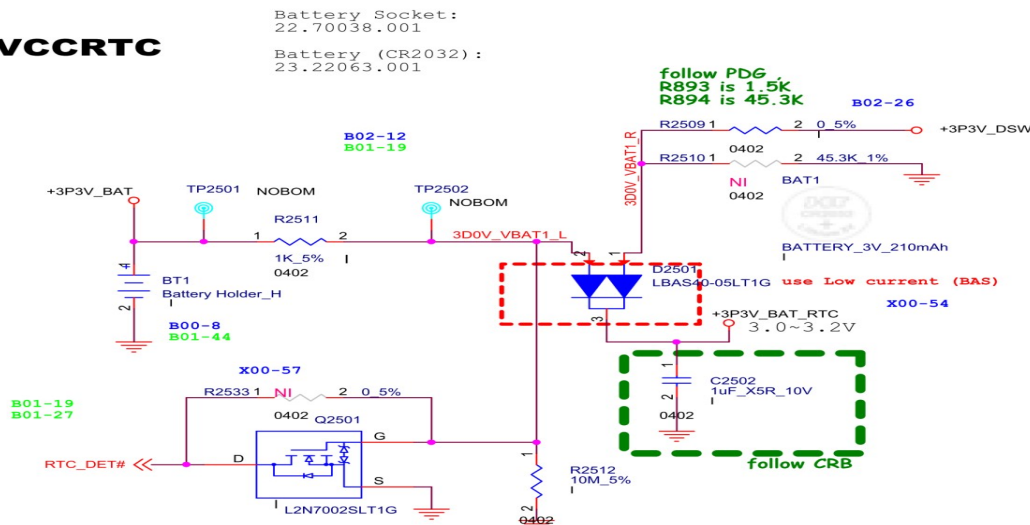
B.3, B.4		TABLE: Abnormal operating and fault condition tests (continued)				P
Ambient temperature T_{amb} (°C)		20.0 to 25.0				—
Power source for EUT: Manufacturer, model/type, output rating....		(See appended table 4.1.2)				—
Component No.	Condition	Supply voltage (V)	Test time	Fuse no.	Fuse current (A)	Observation
USB 3.0/3.1/3.2 (USB3R1)	Overload	264 V	3 h 34 min	F101	0.40	Max. available current is 3.0 A, FI stabilised at 0.40 A, ND, NC, NT, NH. See Note G) in the next page for measured temperature.
USB 3.0/3.1/3.2 (USB3R2)	Overload	264 V	1 h 55 min	F101	0.40	Max. available current is 3.0 A, FI stabilised at 0.40 A, ND, NC, NT, NH. See Note H) in the next page for measured temperature.
CPU Fan R2602 (pin 1-2)	SC	264 V	10 min	F101	0.36	The output voltage of CPU Fan_ Pin2 to GND is 12.09Vdc (Normal output voltage is 12.09Vdc). The fan speed didn't change.
System Fan R2609 (pin 1-2)	SC	264 V	10 min	F101	0.36	The output voltage of System Fan_ Pin2 to GND is 12.09Vdc (Normal output voltage is 12.09Vdc). The fan speed didn't change.
Supplementary information: ¹⁾ The before supplying power of equipment is provided with a protective device (2.0 A fuse). NO=Normal operation, FI: Fault Input Current, UI=Unit shut down immediately, SC=Short circuit, OC=Open circuit, ND=No component damaged, NB= No indication of dielectric breakdown, NC= Cheesecloth remained intact, NT= Tissue paper remained intact, NH=No hazard.						

IEC 62368-1				
Clause	Requirement + Test		Result - Remark	Verdict
B.3, B.4	TABLE: Abnormal operating and fault condition tests			P
Supply voltage (V)..... :	A) 264 V, 60 Hz / Horizontal	B) 264 V, 60 Hz / Horizontal	C) 264 V, 60 Hz / Horizontal	—
Ambient temperature during test T_{amb} (°C)..... :	21.1	20.9	20.3	—
Maximum measured temperature T of part/at: ⁴⁾	T (°C) ¹⁾			Allowed T_{max} (°C)
AC Inlet body ³⁾	38.3	36.0	34.5	104
Enclosure outside near HDMI port (Metal) ³⁾	41.7	33.0	32.3	80
Enclosure outside near CPU (Metal) ³⁾	40.5	32.7	32.5	80
Enclosure outside near SPS (Metal) ³⁾	32.1	30.1	29.8	80
Enclosure outside near USB port (Plastic) ³⁾	31.9	27.4	26.9	80
Power button ²⁾	30.3	27.1	26.7	87
Supplementary information:				
¹⁾ Calculated value for T_{amb} : 25 °C ²⁾ External surfaces touched occasionally for very short period (> 1 s and < 10 s). ³⁾ Surface that need not be touched to operate the equipment (< 1s). ⁴⁾ Parts outside the equipment.				

B.3, B.4	TABLE: Abnormal operating and fault condition tests			P
Supply voltage (V)..... :	D) 264 V, 60 Hz / Horizontal	E) 264 V, 60 Hz / Horizontal	F) 264 V, 60 Hz / Horizontal	—
Ambient temperature during test T_{amb} (°C)..... :	21.9	20.4	20.9	—
Maximum measured temperature T of part/at: ⁴⁾	T (°C) ¹⁾			Allowed T_{max} (°C)
AC Inlet body ³⁾	32.0	32.2	32.3	104
Enclosure outside near HDMI port (Metal) ³⁾	32.1	33.1	33.0	80
Enclosure outside near CPU (Metal) ³⁾	32.6	32.8	33.0	80
Enclosure outside near SPS (Metal) ³⁾	28.6	28.4	28.5	80
Enclosure outside near USB port (Plastic) ³⁾	28.0	28.4	28.3	80
Power button ²⁾	27.3	27.1	28.3	87
Supplementary information:				
¹⁾ Calculated value for T_{amb} : 25 °C ²⁾ External surfaces touched occasionally for very short period (> 1 s and < 10 s). ³⁾ Surface that need not be touched to operate the equipment (< 1s). ⁴⁾ Parts outside the equipment.				

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

B.3, B.4	TABLE: Abnormal operating and fault condition tests			P
Supply voltage (V)..... :	-	G) 264 V, 60 Hz / Horizontal	H) 264 V, 60 Hz / Horizontal	—
Ambient temperature during test T_{amb} (°C)..... :	-	23.6	21.9	—
Maximum measured temperature T of part/at: ⁴⁾	T (°C) ¹⁾			Allowed T_{max} (°C)
AC Inlet body ³⁾	-	31.7	32.0	104
Enclosure outside near HDMI port (Metal) ³⁾	-	32.4	32.5	80
Enclosure outside near CPU (Metal) ³⁾	-	31.7	32.5	80
Enclosure outside near SPS (Metal) ³⁾	-	28.5	28.5	80
Enclosure outside near USB port (Plastic) ³⁾	-	26.4	26.9	80
Power button ²⁾	-	26.4	26.9	87
Supplementary information: ¹⁾ Calculated value for T_{amb} : 25 °C ²⁾ External surfaces touched occasionally for very short period (> 1 s and < 10 s). ³⁾ Surface that need not be touched to operate the equipment (< 1s). ⁴⁾ Parts outside the equipment.				

IEC 62368-1							
Clause	Requirement + Test				Result - Remark		Verdict
M.3	TABLE: Protection circuits for batteries provided within the equipment						P
Is it possible to install the battery in a reverse polarity position?				Yes		—	
Equipment Specification	Charging						
	Voltage (V)			Current (A)			
	-			-			
Manufacturer/type	Battery specification						
	Non-rechargeable batteries			Rechargeable batteries			
	Discharging current (A)	Unintentional charging current (A)	Charging		Discharging current (A)	Reverse charging current (A)	
			Voltage (V)	Current (A)			
DOUBLE BEST CO LTD / CR2032 (j)(k)	-	10 mA	-	-	-	*)	
Note: The tests of M.3.2 are applicable only when above appropriate data is not available.							
Specified battery temperature (°C).....				-			
Component No.	Fault condition	Charge/ discharge mode	Test time	Temp. (°C)	Current (mA)	Voltage (Vd.c.)	Observation
D2501 (pin 1-2)	SC	Charging	20 min	-	3.01	3.0	No hazard, NL, NS, NE, NF
D2501 (pin 2-3)	SC	Charging	20 min	-	2.91	3.0	No hazard, NL, NS, NE, NF
R2511	SC	Charging	20 min	-	0.01	3.0	No hazard, NL, NS, NE, NF
Supplementary information:							
RTC battery circuit diagram							
VCCRTC Battery Socket: 22.70038.001 Battery (CR2032): 23.22063.001 							
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.							
*) RTC Battery cannot be installed in reverse direction due to the construction design.							

IEC 62368-1					
Clause	Requirement + Test			Result - Remark	
M.4.2	TABLE: Charging safeguards for equipment containing a secondary lithium battery				N/A
Maximum specified charging voltage (V)..... :					—
Maximum specified charging current (A)					—
Highest specified charging temperature (°C)					
Lowest specified charging temperature (°C)					
Battery manufacturer/type	Operating and fault condition	Measurement			Observation
		Charging voltage (V)	Charging current (A)	Temp. (°C)	
Supplementary information: Abbreviation: SC= short circuit; OC= open circuit; MSCV= maximum specified charging voltage; MSCC= maximum specified charging current; HSCT= highest specified charging temperature; LSCT= lowest specified charging temperature.					

IEC 62368-1							
Clause	Requirement + Test			Result - Remark		Verdict	
Q.1	TABLE: Circuits intended for interconnection with building wiring (LPS)						P
Output Circuit	Condition	U _{oc} (V)	Time (s)	I _{sc} (A)		S (VA)	
				Meas.	Limit	Meas.	Limit
USB Type-C (USB3S3)	Normal	5.17	5	2.97	≤ 8.0	12.92	≤ 100
USB 2.0/3.0/3.1/3.2 (USB3F1)	Normal	5.16	5	3.10	≤ 8.0	13.68	≤ 100
USB2.0 (USB2F1)	Normal	5.16	5	2.36	≤ 8.0	9.07	≤ 100
AUDIO (UAJ1)	Normal	0	5	0	≤ 8.0	0	≤ 100
AUDIO (AUDIO1)	Normal	0	5	0	≤ 8.0	0	≤ 100
Display port (DP1)	Normal	3.35	5	0.70	≤ 8.0	2.16	≤ 100
Display port (DP2)	Normal	3.35	5	0.70	≤ 8.0	2.16	≤ 100
PS/2 port (KYBD_MOUSE)	Normal	5.11	5	2.20	≤ 8.0	9.81	≤ 100
COM port (COM1)	Normal	0	5	0	≤ 8.0	0	≤ 100
USB 3.0/3.1/3.2 (USB3R1)	Normal	5.17	5	3.18	≤ 8.0	13.54	≤ 100
USB 3.0/3.1/3.2 (USB3R2)	Normal	5.17	5	3.11	≤ 8.0	13.24	≤ 100
USB2.0 (RJ45R1)	Normal	5.17	5	2.89	≤ 8.0	11.40	≤ 100
RJ45 (RJ45R1)	Normal	0	5	0	≤ 8.0	0	≤ 100
HDMI port	Normal	5.17	5	0.40	≤ 8.0	1.41	≤ 100
mini-Display port	Normal	3.36	5	3.01	≤ 8.0	7.26	≤ 100
Supplementary Information:							

IEC 62368-1						
Clause	Requirement + Test			Result - Remark		Verdict
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
Top, Bottom, Side, Rear enclosure	Metal	0.8	Figure V.2	30 N	5 s	All safeguard remains effective.
Top, Bottom, Side, Rear enclosure	Metal	0.8	Circular plane surface 30 mm in diameter	250 N	5 s	All safeguard remains effective.
Supplementary information:						

T.6, T.9	TABLE: Impact test				P
Location/part	Material	Thickness (mm)	Height (mm)	Observation	
Top, Bottom, Side, Rear enclosure	Metal	0.8	1300	All safeguard remains effective.	
Supplementary information:					

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

IEC 62368-1					
Clause	Requirement + Test			Result - Remark	Verdict
T.8	TABLE: Stress relief test				P
Location/Part	Material	Thickness (mm)	Oven Temperature (°C)	Duration (h)	Observation
Front bezel	Plastic	Min. 0.8	70	7	No risk of shrinkage or distortion.
Supplementary information:					

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

IEC 62368-1					
Clause	Requirement + Test			Result - Remark	Verdict
4.1.2	TABLE: Critical components information				P
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard ³⁾	Mark(s) of conformity ¹⁾
- Description²⁾:					
Front bezel (Decorative part)	KINGFA SCI & TECH CO LTD	GAR-011(ww)	HB, 60 °C	UL 94 UL 746	UL (E171666)
Alt.)	Interchangeable	Interchangeable	Min. HB, 60 °C	UL 94 UL 746	UL
Rubber stand (right side and bottom)	Interchangeable	Interchangeable	Min. HB	UL 94	UL
Enclosure	Interchangeable	Interchangeable	Metal, Min. 0.6 mm thickness	EN 62368-1	Tested in the equipment.
Internal plastic	Interchangeable	Interchangeable	Min. V-2, or HF-2	UL 94	UL
- Description²⁾:					
Power supply for building-in	Shenzhen Huntkey Electric Co Ltd (DELL)	HU300EPS-00	I/P: AC 100-240 V~, 50-60 Hz, 4.2 A, Class I, Tma: 45 °C, Max. TOTAL Power 300 W (Altitude: 5000 m)	IEC 62368-1: 2014 EN 62368-1: 2014	Nemko (Cert. no. NO114058, Report no. 404859)
Supplementary information:					
1) Provided evidence ensures the agreed level of compliance. See OD-2039.					
2) Description line content is optional. Main line description needs to clearly detail the component used for testing.					
3) License available upon request. See OD-2020, Cl.4.7.3, b)					

IEC 62368-1					
Clause	Requirement + Test			Result - Remark	Verdict
4.1.2	TABLE: Critical components information (continued)				P
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard ³⁾	Mark(s) of conformity ¹⁾
- Description²⁾:					
HDD	Seagate Singapore International Headquarters Pte Ltd	ST4000DM004	5 Vdc / 0.55 A, 12 Vdc / 0.37 A	EN 60950-1 EN 62368-1 UL 60950-1	TUV SUD UL (E190397)
Alt.)	Interchangeable	Interchangeable	5 Vdc / 0.55 A, 12 Vdc / 0.37 A	EN 60950-1 EN 62368-1 UL 60950-1	TUV, VDE or other NCB UL
SSD	KIOXIA Corporation	KXG6yZNVxxxx	3.3 Vdc, Max. 4.7 W	EN 60950-1 UL 62368-1	TUV UL (E319571)
Alt.)	Interchangeable	Interchangeable	3.3 Vdc, Max. 4.7 W	EN 60950-1 EN 62368-1 UL 62368-1	TUV, VDE or other NCB UL
ODD	PHILIPS & LITE- ON DIGITAL SOLUTIONS CORP	DU-8A5LH	5 Vdc, 1.5 A Class 1 LASER PRODUCT	EN 60825-1	TUV
Alt.)	Interchangeable	Interchangeable	5 Vdc, 1.5 A Class 1 LASER PRODUCT	EN 60825-1	TUV, VDE or other NCB UL
Supplementary information:					
¹⁾ Provided evidence ensures the agreed level of compliance. See OD-2039.					
²⁾ Description line content is optional. Main line description needs to clearly detail the component used for testing.					
³⁾ License available upon request. See OD-2020, Cl.4.7.3, b)					

IEC 62368-1					
Clause	Requirement + Test			Result - Remark	Verdict
4.1.2	TABLE: Critical components information (continued)				P
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard ³⁾	Mark(s) of conformity ¹⁾
- Description²⁾:					
CPU Fan with CPU cooler	Shenzhen Dongweifeng	EFH-12J12WZ	12 Vdc, 1.0 A, 28.6 CFM min.	EN 60950-1 EN 62368-1 UL 507	VDE UL (E305197)
System Fan	ASIA VITAL COMPONENTS CO LTD	DASA0820R2U	12 Vdc, 0.60 A, 52.9 CFM min.	EN 60950-1 EN 62368-1 UL 507	TUV SUD UL (E158191)
- Description²⁾:					
RTC battery (Lithium type)	MITSUBISHI ELECTRIC HOME APPLIANCE CO LTD	CR2032	3 Vdc, Max Abnormal Charging Current 10 mA	UL 1642	UL (MH21249)
Alt.)	SHUN WO NEW POWER BATTERY TECHNOLOGY LTD	CR2032*	3 Vdc, Max Abnormal Charging Current 10 mA	UL 1642	UL (MH25881)
Alt.)	JHIH HONG TECHNOLOGY CO LTD	CR2032	3 Vdc, Max Abnormal Charging Current 10 mA	UL 1642	UL (MH48406)
Alt.)	DOUBLE BEST CO LTD	CR2032 (j)(k)	3 Vdc, Max Abnormal Charging Current 10 mA	UL 1642	UL (MH46388)
PCB (Main board)	GOLDEN ELITE TECHNOLOGY (SHEN ZHEN) LTD	GE-1	V-0, 130 °C	UL 796	UL (E307069)
Alt.)	Interchangeable	Interchangeable	Min. V-0, Min. 130 °C	UL 796	UL
Supplementary information:					
1) Provided evidence ensures the agreed level of compliance. See OD-2039.					
2) Description line content is optional. Main line description needs to clearly detail the component used for testing.					
3) License available upon request. See OD-2020, Cl.4.7.3, b)					

IEC 62368-1					
Clause	Requirement + Test			Result - Remark	Verdict
4.1.2	TABLE: Critical components information (continued)				P
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard ³⁾	Mark(s) of conformity ¹⁾
- Description²⁾: Protective IC					
U3504, U3501 for USB 3.0 / 3.1 / 3.2 ports, U3204 for USB 2.0 port, U6501 for PS/2 port	RICHTEK	RT9742CG. (The dot "." can be J5F/ J5/ V represent package type)	2.7 V to 6 V, 3 A / 2 A / 1.5 A / 1 A, 70 mohm / 55 mohm (typ.) N-MOSFET Switch; SELV Class III	IEC 62368-1: 2014, EN 62368-1: 2014/A11:2017 UL 2367	CB by Nemko UL
Alt.)	JOULWATT TECHNOLOGY CO LIMITED	JW7115S- 2SOTA#TRPBF	Vin: 2.7 - 5.5 Vdc, Vout: 2.7 - 5.5 Vdc, Iout: 2.05 - 2.35 A	IEC 62368-1: 2014 EN 62368-1: 2014/A11: 2017 UL 62368-1	CB by UL UL
Alt.)	SILERGY	SY6288C30AA C	Input Voltage: 2.5 to 5.5 Vdc, Output Continuous Rating: Max. 2.0 A, Current Limit Rating: 3.7 A	IEC 62368-1: 2014 UL 2367	CB by UL UL
Alt.)	Will Semiconductor	WS4612EDx- 5/TR (x can be A, B, C or D, A for EN high enable & Discharge, B for EN low enable & Discharge, C for EN high enable & no Discharge, D for EN low enable & no Discharge.)	Input Voltage Range: 2.5 - 5.5 Vdc, Current Limit Rating: 2.1 - 2.7 A	IEC 62368-1: 2014 EN 62368-1: 2014/A11:2017 UL 62368-1	CB by UL, UL
Supplementary information:					
1) Provided evidence ensures the agreed level of compliance. See OD-2039.					
2) Description line content is optional. Main line description needs to clearly detail the component used for testing.					
3) License available upon request. See OD-2020, Cl.4.7.3, b)					

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
4.1.2	TABLE: Critical components information (continued)				P
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard ³⁾	Mark(s) of conformity ¹⁾
- Description²⁾: Protective IC (continued)					
U3703 for USB 2.0, USB 3.0 / 3.1 / 3.2 ports	RICHTEK TECHNOLOGY CORP	RT9742CG. (The dot "." can be J5F/ J5/ V represent package type)	2.7 V to 6 V, O/P: 3 A / 2.5 A / 2 A / 1.5 A / 1A / 0.5A, 70 mΩ / 55 mΩ (typ.) N-MOSFET Switch; SELV Class III	IEC 60950-1: 2005, IEC 60950-1: 2005/AMD2: 2013, IEC 62368-1: 2014, EN 62368-1: 2014 / A11: 2017 UL 2367	CB by Nemko UL
Alt.)	JOULWATT TECHNOLOGY CO LIMITED	JW7115S- 2SOTA#TRPBF	(optional) Vin: 2.7 - 5.5 Vdc, Vout: 2.7 - 5.5 Vdc, Iout: 2.05 - 2.35 A	IEC 62368-1: 2014, EN 62368-1: 2014/A11:2017 UL 2367	CB by UL UL
Alt.)	SILERGY TECHNOLOGY (TAIWAN) INC	SY6288C30AA C	Input Voltage: 2.5 to 5.5 Vdc Output Continuous Rating: Max. 2.0 A Current Limit Rating: 3.7 A	IEC 62368-1: 2014 UL	CB by Nemko UL
Alt.)	WILL SEMICONDUCT OR	WS4612EDx- 5/TR (x can be A, B, C or D, A for EN high enable & Discharge, B for EN low enable & Discharge, C for EN high enable & no Discharge, D for EN low enable & no Discharge.)	Input Voltage Range: 2.5 - 5.5 Vdc Current Limit Rating: 2.1 - 2.7 A	IEC 62368-1: 2014, EN 62368-1: 2014+ A11: 2017 UL 2367	CB by UL UL
Supplementary information:					
1) Provided evidence ensures the agreed level of compliance. See OD-2039.					
2) Description line content is optional. Main line description needs to clearly detail the component used for testing.					
3) License available upon request. See OD-2020, Cl.4.7.3, b)					

IEC 62368-1					
Clause	Requirement + Test			Result - Remark	Verdict
4.1.2	TABLE: Critical components information (continued)				P
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard ³⁾	Mark(s) of conformity ¹⁾
- Description²⁾: Protective IC (continued)					
U3601 for USB 2.0 port	TEXAS INSTRUMENTS INCORPORATED	TPS2546, may be followed by additional characters that do not impact the safety features of the device	Input Voltage: 4.5 to 5.5 Vdc, Output Continuous Rating: 2.5 A, Output Current Limit: 3.1 A	IEC 62368-1: 2014, EN 62368-1: 2014/ A11: 2017 UL 2367	CB by UL UL
Alt.)	DIODES	PI5USB2546ZH DEX	Input Voltage = 4.5 Vdc to 5.5 Vdc, Continuous Rating: 30 mA to 2.5 A, Current Limit: 100 mA to 3.18 A	IEC 60950-1: 2005+A1+A2 UL 2367	CB by UL UL
Alt.)	ANPEC	APL3524QBTR G	Input Voltage: 4.5 to 5.5 Vdc Output Continuous Rating: 0.15 to 2.5 A Current Limit Rating: 0.275 to 3.17 A	IEC 62368-1: 2014, EN 62368-1: 2014/ A11: 2017 UL 2367	CB by UL UL
Alt.)	SILEGO	SLGC55546C, maybe followed by V or VTR	Input Voltage = 4.5 Vdc to 5.5 Vdc Output Continuous Rating: 0.2 A to 2.5 A Output Current Limit: 0.3 A to 3.17 A	IEC 60950-1: 2005+A1+A2 UL 2367	CB by UL UL
Supplementary information: ¹⁾ Provided evidence ensures the agreed level of compliance. See OD-2039. ²⁾ Description line content is optional. Main line description needs to clearly detail the component used for testing. ³⁾ License available upon request. See OD-2020, Cl.4.7.3, b)					

IEC 62368-1					
Clause	Requirement + Test			Result - Remark	Verdict
4.1.2	TABLE: Critical components information (continued)				P
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard ³⁾	Mark(s) of conformity ¹⁾
- Description²⁾: Protective IC (continued)					
U7202 for USB Type C port	SILERGY	SY6288 followed by F1, F2, F3 or F4, followed by ABC	Input Voltage: VIN = 2.5 to 5.5 Vdc, Output Continuous Rating: 0.3 to 3.0 A, Current Limit Rating: 0.4 to 4.0 A	IEC 62368-1: 2014 UL 2367	CB by UL UL
Alt.)	ANPEC	APL3556GCTIT RG	Input Voltage: 2.7 to 5.5 Vdc, Max. Output Continuous Rating: 0.2 to 3.0 A, Max. Current Limit Rating: 0.7 to 3.9 A	IEC 62368-1: 2014 UL 2367	CB by UL UL
Alt.)	DIODES	AP22615AWU-7	Input Voltage/Output Continuous Rating: 3.0 - 4.0 Vdc, Iout = 1 A to 1.5 A; 4.0 - 5.5 Vdc, Iout = 1 A to 3 A; Output Current Limit: 3.0 - 5.5 Vdc, at 1.35 A - 3.6 A	IEC 60950-1 (ed.2); am1; am2, EN 60950-1: 2006/A11:2009 /A1:2010 /A12:2011/A2: 2013, IEC 62368-1: 2014, EN 62368-1: 2014/ A11: 2017 UL 2367	CB by UL UL
Supplementary information: ¹⁾ Provided evidence ensures the agreed level of compliance. See OD-2039. ²⁾ Description line content is optional. Main line description needs to clearly detail the component used for testing. ³⁾ License available upon request. See OD-2020, Cl.4.7.3, b)					

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
4.1.2	TABLE: Critical components information (continued)				P
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard ³⁾	Mark(s) of conformity ¹⁾
- Description²⁾: Protective IC (continued)					
U5701, U5805 for Display ports	RICHTEK	RT9742CG. (The dot "." can be J5F/ J5/ V represent package type)	2.7 V to 6 V, 3 A / 2 A / 1.5 A / 1 A, 70 mohm / 55 mohm (typ.) N-MOSFET Switch; SELV Class III	IEC 62368-1: 2014, EN 62368-1: 2014/A11:2017 UL 2367	CB by Nemko UL
Alt.)	GLOBAL MIXEDMODE TECHNOLOGY INC	G517CX1X2X3 X4, X1=1, 2, 3, or 4, X2=T7, T1, TB, TO, TP, KF, U5 or TM, X3=1, 2 or 3, X4=U or D	2.7 - 5.5 Vdc, Operational Current Rating per output (A): 0.5 A Overcurrent Protection Current Rating per output (A): 0.6 A - 1.0 A	IEC 62368-1: 2014, EN 62368-1: 2014+A11:2017 UL 2367	CB by TUV UL
Alt.)	DIODES INC	AP2151z (Where 'z' may be any single or multiple alpha- numeric characters)	Single channel / Dual channel: 0.5 A – 1.5 A, 2.7 – 5.5 Vdc., (Supplied by external ES1 power source) (no marking required)	IEC 62368-1: 2014, EN 62368-1: 2014+A11:2017 UL 2367	CB by Nemko UL
Alt.)	Fitipower Integrated Technology Inc	FP6861CI1AS5 CTR	I/P: 2.7 - 5.5 V, O/P: Current limit: 3.5 A max.	IEC 62368-1: 2018 UL 2367	CB by TUVRH UL
Supplementary information:					
1) Provided evidence ensures the agreed level of compliance. See OD-2039.					
2) Description line content is optional. Main line description needs to clearly detail the component used for testing.					
3) License available upon request. See OD-2020, Cl.4.7.3, b)					

IEC62368_1E – ATTACHMENT 1			
Clause	Requirement + Test	Result - Remark	Verdict
ATTACHMENT TO TEST REPORT IEC 62368-1 EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES (AUDIO/VIDEO, INFORMATION AND COMMUNICATION TECHNOLOGY EQUIPMENT - PART 1: SAFETY REQUIREMENTS)			
Differences according to : EN IEC 62368-1:2020+A11:2020			
Attachment Form No. : EU_GD_IEC62368_1E			
Attachment Originator : UL(Demko)			
Master Attachment : 2021-02-04			
Copyright © 2021 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved.			
	CENELEC COMMON MODIFICATIONS (EN)		P
	Clause numbers in the cells that are shaded light grey are clause references in EN IEC 62368-1:2020+A11:2020. All other clause numbers in that column, except for those in the paragraph below, refers to IEC 62368-1:2018. Clauses, subclauses, notes, tables, figures and annexes which are additional to those in IEC 62368-1:2018 are prefixed “Z”.		P
	Add the following annexes: Annex ZA (normative) Normative references to international publications with their corresponding European publications Annex ZB (normative) Special national conditions Annex ZC (informative) A-deviations Annex ZD (informative) IEC and CENELEC code designations for flexible cords		—
1	Modification to Clause 3 .		
3.3.19	Sound exposure <i>Replace 3.3.19 of IEC 62368-1 with the following definitions:</i>		N/A

IEC62368_1E – ATTACHMENT 1			
Clause	Requirement + Test	Result - Remark	Verdict
3.3.19.1	momentary exposure level, MEL metric for estimating 1 s sound exposure level from the HD 483-1 S2 test signal applied to both channels, based on EN 50332-1:2013, 4.2. Note 1 to entry: MEL is measured as A-weighted levels in dB. Note 2 to entry: See B.3 of EN 50332-3:2017 for additional information.	This equipment is not portable audio equipment.	N/A
3.3.19.3	sound exposure, E A-weighted sound pressure (p) squared and integrated over a stated period of time, T Note 1 to entry: The SI unit is $\text{Pa}^2 \text{s}$. $E = \int_0^T p(t)^2 dt$		N/A
3.3.19.4	sound exposure level, SEL logarithmic measure of sound exposure relative to a reference value, E_0, typically the 1 kHz threshold of hearing in humans. Note 1 to entry: SEL is measured as A-weighted levels in dB. $SEL = 10 \lg \left(\frac{E}{E_0} \right) \text{ dB}$ Note 2 to entry: See B.4 of EN 50332-3:2017 for additional information.		N/A
3.3.19.5	digital signal level relative to full scale, dBFS levels reported in dBFS are always r.m.s. Full scale level, 0 dBFS, is the level of a dc-free 997-Hz sine wave whose undithered positive peak value is positive digital full scale, leaving the code corresponding to negative digital full scale unused Note 1 to entry: It is invalid to use dBFS for non-r.m.s. levels. Because the definition of full scale is based on a sine wave, the level of signals with a crest factor lower than that of a sine wave may exceed 0 dBFS. In particular, square wave signals may reach +3,01 dBFS.		N/A

IEC62368_1E – ATTACHMENT 1			
Clause	Requirement + Test	Result - Remark	Verdict
2	Modification to Clause 10		
10.6	Safeguards against acoustic energy sources Replace 10.6 of IEC 62368-1 with the following:		N/A
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. 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;	This equipment is not portable audio equipment.	N/A
Cont.	NOTE 3 Professional equipment is equipment sold through special sales channels. All products sold through normal electronics stores are considered not to be professional equipment. – hearing aid equipment and other devices for assistive listening; – the following type of analogue personal music players: • long distance radio receiver (for example, a	This equipment is not portable audio equipment.	N/A

IEC62368_1E – ATTACHMENT 1			
Clause	Requirement + Test	Result - Remark	Verdict
	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. 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 71-1:2011, 4.20 and the related tests methods and measurement distances apply.		
10.6.1.2	Non-ionizing radiation from radio frequencies in the range 0 to 300 GHz The amount of non-ionizing radiation is regulated by European Council Recommendation 1999/519/EC of 12 July 1999 on the limitation of exposure of the general public to electromagnetic fields (0 Hz to 300 GHz). For intentional radiators, ICNIRP guidelines should be taken into account for Limiting Exposure to Time-Varying Electric, Magnetic, and Electromagnetic Fields (up to 300 GHz). For hand-held and body mounted devices, attention is drawn to EN 50360 and EN 50566.	No other types of radiation.	N/A
10.6.2	Classification of devices without the capacity to estimate sound dose		N/A



IEC62368_1E – ATTACHMENT 1			
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 hour) requirements. These clauses remain in effect only for devices that do not comply with sound dose estimation as stipulated in EN 50332-3. 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.	This equipment is not portable audio equipment.	N/A
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.	This equipment is not portable audio equipment.	N/A

IEC62368_1E – ATTACHMENT 1			
Clause	Requirement + Test	Result - Remark	Verdict
Cont.	– for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general use, the unweighted r.m.s. output voltage shall be ≤ 27 mV (analogue interface) or -25 dBFS (digital interface) when playing the fixed “programme simulation noise” described in EN 50332-1. – The RS1 limits will be updated for all devices as per 10.6.3.2.	This equipment is not portable audio equipment.	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 130 detection, the $L_{Aeq,T}$ acoustic output shall be ≤ 100 dB(A) when playing the fixed “programme simulation noise” as described in EN 50332-1. – for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general use, the unweighted r.m.s. output voltage shall be ≤ 150 mV (analogue interface) or -10 dBFS (digital interface) when playing the fixed “programme simulation noise” as described in EN 50332-1.	This equipment is not portable audio equipment.	N/A
10.6.2.4	RS3 limits RS3 is a class 3 acoustic energy source that exceeds RS2 limits.	This equipment is not portable audio equipment.	N/A
10.6.3	Classification of devices (new)		N/A
10.6.3.1	General Previous limits (10.6.2) created abundant false negative and false positive PMP sound level warnings. New limits, compliant with The Commission Decision of 23 June 2009, are given below.		N/A

IEC62368_1E – ATTACHMENT 1			
Clause	Requirement + Test	Result - Remark	Verdict
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 $L_{Aeq,T}$ acoustic output shall be ≤ 80 dB when playing the fixed “programme simulation noise” described in EN 50332-1. – for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general use, the unweighted r.m.s. output voltage shall be ≤ 15 mV (analogue interface) or -30 dBFS (digital interface) when playing the fixed “programme simulation noise” described in EN 50332-1.		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, shall be ≤ 80 dB when playing the fixed “programme simulation noise” described in EN 50332-1. – for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general use, the unweighted r.m.s. output level, integrated over one week, as described in EN50332-3, shall be ≤ 15 mV (analogue interface) or -30 dBFS (digital interface) when playing the fixed “programme simulation noise” described in EN 50332-1.		N/A

IEC62368_1E – ATTACHMENT 1			
Clause	Requirement + Test	Result - Remark	Verdict
10.6.4	Requirements for maximum sound exposure		N/A
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 or EN 50332-2 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 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 wording – element 3: “Hearing damage risk” or equivalent wording – element 4: “Do not listen at high volume levels for long periods.” or equivalent wording 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.		N/A

IEC62368_1E – ATTACHMENT 1			
Clause	Requirement + Test	Result - Remark	Verdict
Cont.	The equipment shall provide a means to actively inform the user of the increased sound level when the equipment is operated with an output exceeding RS1. Any means used shall be acknowledged by the user before activating a mode of operation which allows for an output exceeding RS1. The acknowledgement does not need to be repeated more than once every 20 h of cumulative listening time. 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.		N/A
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 EN 50332-3, 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

IEC62368_1E – ATTACHMENT 1			
Clause	Requirement + Test	Result - Remark	Verdict
10.6.5.2	Dose-based warning and requirements When a dose of 100 % <i>CSD</i> is reached, and at least at every 100 % further increase of <i>CSD</i>, the device shall warn the user and require an acknowledgement. In case the user does not acknowledge, the output level shall automatically decrease to compliance with class RS1. The warning shall at least clearly indicate that listening above 100 % <i>CSD</i> leads to the risk of hearing damage or loss.		N/A
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. The EL settling time (time from starting level reduction to reaching target output) shall be 10 s or faster. Test of EL functionality is conducted according to EN 50332-3, using the limits from this clause. For equipment provided as a package (player with its listening device), the level integrated over 180 s shall be 100 dB or lower. For equipment provided with a standardized connector, the unweighted level integrated over 180 s shall be no more than 150 mV for an analogue interface and no more than -10 dBFS for a digital interface. NOTE In case the source is known not to be music (or test signal), the EL may be disabled.		N/A

IEC62368_1E – ATTACHMENT 1			
Clause	Requirement + Test	Result - Remark	Verdict
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 maximize the measured acoustic output, the input voltage of the listening device when playing the fixed “programme simulation noise” as described in EN 50332-1 shall be ≥ 75 mV. NOTE The values of 94 dB and 75 mV correspond with 85 dB and 27 mV or 100 dB and 150 mV.		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, 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
10.6.6.3	Cordless listening devices In cordless mode, – with any playing and transmitting device playing the fixed programme simulation noise described in EN 50332-1; and – respecting the cordless transmission standards, where an air interface standard exists that specifies the equivalent acoustic level; and – with volume and sound settings in the receiving device (for example, built-in volume level control, additional sound features like equalization, etc.) set to the combination of positions that maximize the measured acoustic output for the above mentioned programme simulation noise, the $L_{Aeq,T}$ acoustic output of the listening device shall be ≤ 100 dB with an input signal of -10 dBFS.		N/A

IEC62368_1E – ATTACHMENT 1							
Clause	Requirement + Test				Result - Remark		Verdict
10.6.6.4	Measurement method <i>Measurements shall be made in accordance with EN 50332-2 as applicable.</i>						N/A
3	Modification to the whole document						
	Delete all the “country” notes in the reference document according to the following list:						P
	0.2.1	Note 1 and 2	1	Note 4 and 5	3.3.8.1	Note 2	
	3.3.8.3	Note 1	4.1.15	Note	4.7.3	Note 1 and 2	
	5.2.2.2	Note	5.4.2.3.2.2 Table 12	Note c	5.4.2.3.2.4	Note 1 and 3	
	5.4.2.3.2.4 Table 13	Note 2	5.4.2.5	Note 2	5.4.5.1	Note	
	5.4.10.2.1	Note	5.4.10.2.2	Note	5.4.10.2.3	Note	
	5.5.2.1	Note	5.5.6	Note	5.6.4.2.1	Note 2 and 3 and 4	
	5.6.8	Note 2	5.7.6	Note	5.7.7.1	Note 1 and Note 2	
	8.5.4.2.3	Note	10.2.1 Table 39	Note 3 and 4 and 5	10.5.3	Note 2	
	10.6.4	Note 3	F.3.3.6	Note 3	Y.4.1	Note	
	Y.4.5	Note					
4	Modification to Clause 1						
1	Add the following note: <i>NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2011/65/EU.</i>				Considered.		P

IEC62368_1E – ATTACHMENT 1			
Clause	Requirement + Test	Result - Remark	Verdict
5	Modification to 4.Z1		
4.Z1	Add the following new subclause after 4.9: To protect against excessive current, short-circuits and earth faults in circuits connected to an a.c. mains, protective devices shall be included either as integral parts of the equipment or as parts of the building installation, subject to the following, a), b) and c): a) except as detailed in b) and c), protective devices necessary to comply with the requirements of B.3.1 and B.4 shall be included as parts of the equipment; b) for components in series with the mains input to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, short-circuit and earth fault protection may be provided by protective devices in the building installation; c) it is permitted for pluggable equipment type B or permanently connected equipment, to rely on dedicated overcurrent and short-circuit protection in the building installation, provided that the means of protection, e.g. fuses or circuit breakers, is fully specified in the installation instructions. If reliance is placed on protection in the building installation, the installation instructions shall so state, except that for pluggable equipment type A the building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet.	Considered.	P
6	Modification to 5.4.2.3.2.4		
5.4.2.3.2.4	Add the following to the end of this subclause: The requirement for interconnection with external circuit is in addition given in EN 50491-3:2009.	Not applicable.	N/A
7	Modification to 10.2.1		
10.2.1	Add the following to ^{c)} and ^{d)} in table 39: For additional requirements, see 10.5.1.	No X-Ray.	N/A

IEC62368_1E – ATTACHMENT 1			
Clause	Requirement + Test	Result - Remark	Verdict
8	Modification to 10.5.1		
10.5.1	Add the following after the first paragraph: For RS 1 compliance is checked by measurement under the following conditions: In addition to the normal operating conditions, all controls adjustable from the outside by hand, by any object such as a tool or a coin, and those internal adjustments or 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 10 cm from the outer surface of the apparatus. Moreover, the measurement shall be made under fault conditions causing an increase of the high voltage, provided an intelligible picture is maintained for 1 h, at the end of which the measurement is made. For RS1, the dose-rate shall not exceed 1 µSv/h taking account of the background level. NOTE Z2 These values appear in Directive 96/29/Euratom of 13 May 1996.	No X-Ray.	N/A
9	Modification to G.7.1		
G.7.1	Add the following note: NOTE Z1 The harmonized code designations corresponding to the IEC cord types are given in Annex ZD.	Not applicable.	N/A

IEC62368_1E – ATTACHMENT 1			
Clause	Requirement + Test	Result - Remark	Verdict
10	Modification to Bibliography		
	Add the following notes for the standards indicated: IEC 60130-9 NOTE Harmonized as EN 60130-9. IEC 60269-2 NOTE Harmonized as HD 60269-2. IEC 60309-1 NOTE Harmonized as EN 60309-1. IEC 60384 NOTE some parts harmonized in HD 384/HD 60384 series. IEC 60601-2-4 NOTE Harmonized as EN 60601-2-4. IEC 60664-5 NOTE Harmonized as EN 60664-5. IEC 61032:1997 NOTE Harmonized as EN 61032:1998 (not modified). IEC 61508-1 NOTE Harmonized as EN 61508-1. IEC 61558-2-1 NOTE Harmonized as EN 61558-2-1. IEC 61558-2-4 NOTE Harmonized as EN 61558-2-4. IEC 61558-2-6 NOTE Harmonized as EN 61558-2-6. IEC 61643-1 NOTE Harmonized as EN 61643-1. IEC 61643-21 NOTE Harmonized as EN 61643-21. IEC 61643-311 NOTE Harmonized as EN 61643-311. IEC 61643-321 NOTE Harmonized as EN 61643-321. IEC 61643-331 NOTE Harmonized as EN 61643-331.		P
11	ADDITION OF ANNEXES		
ZB	ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)		--
4.1.15	Denmark, Finland, Norway and Sweden To the end of the subclause the following is added: Class I pluggable equipment type A intended for connection to other equipment or a network shall, if safety relies on connection to reliable earthing or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment shall be connected to an earthed mains socket-outlet. The marking text in the applicable countries shall be as follows: In Denmark: "Apparatets stikprop skal tilsluttes en stikkontakt med jord som giver forbindelse til stikproppens jord." In Finland: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan" In Norway: "Apparatet må tilkoples jordet stikkontakt" In Sweden: "Apparaten skall anslutas till jordat uttag"	Refer to General product information in this test report.	P

IEC62368_1E – ATTACHMENT 1			
Clause	Requirement + Test	Result - Remark	Verdict
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	Refer to General product information in this test report	N/A
5.2.2.2	Denmark After the 2nd paragraph add the following: A warning (marking safeguard) for high touch current is required if the touch current exceeds the limits of 3,5 mA a.c. or 10 mA d.c.	No exceed 3.5 mA	N/A
5.4.11.1 and Annex G	Finland and Sweden To the end of the subclause the following is added: For separation of the telecommunication network from earth the following is applicable: If this insulation is solid, including insulation forming part of a component, it shall at least consist of either • two layers of thin sheet material, each of which shall pass the electric strength test below, or • one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below. If this insulation forms part of a semiconductor component (e.g. an optocoupler), there is no distance through insulation requirement for the insulation consisting of an insulating compound completely filling the casing, so that clearances and creepage distances do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition • passes the tests and inspection criteria of 5.4.8 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 5.4.9 shall be performed using 1,5 kV),	Not connected to a telecommunication network nor a cable distribution system.	N/A

IEC62368_1E – ATTACHMENT 1			
Clause	Requirement + Test	Result - Remark	Verdict
Cont.	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 60384-14:2005, subclass Y2. A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions: - the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 60384-14, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in 5.4.11; - the additional testing shall be performed on all the test specimens as described in EN 60384-14; the impulse test of 2,5 kV is to be performed before the endurance test in EN 60384-14, in the sequence of tests as described in EN 60384-14.	Not connected to a telecommunication network nor a cable distribution system.	N/A
5.5.2.1	Norway After the 3rd paragraph the following is added: Due to the IT power system used, capacitors are required to be rated for the applicable line-to-line voltage (230 V).	Considered.	P
5.5.6	Finland, Norway and Sweden To the end of the subclause the following is added: Resistors used as basic safeguard or bridging basic insulation in class I pluggable equipment type A shall comply with G.10.1 and the test of G.10.2.		N/A
5.6.1	Denmark Add to the end of the subclause Due to many existing installations where the socket-outlets can be protected with fuses with higher rating than the rating of the socket-outlets the protection for pluggable equipment type A shall be an integral part of the equipment. <i>Justification:</i> In Denmark an existing 13 A socket outlet can be protected by a 20 A fuse.	No socket-outlets provided.	N/A

IEC62368_1E – ATTACHMENT 1			
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.	Refer to General product information in this test report	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.	Refer to General product information in this test report	N/A
5.6.5.1	To the second paragraph the following is added: The range of conductor sizes of flexible cords to be accepted by terminals for equipment with a rated current over 10 A and up to and including 13 A is: 1,25 mm ² to 1,5 mm ² in cross-sectional area.	Refer to General product information in this test report	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.	Refer to General product information in this test report.	N/A
5.7.6	Denmark To the end of the subclause the following is added: The installation instruction shall be affixed to the equipment if the protective conductor current exceeds the limits of 3,5 mA a.c. or 10 mA d.c.	No exceed 3.5 mA	N/A
5.7.6.2	Denmark To the end of the subclause the following is added: The warning (marking safeguard) for high touch current is required if the touch current or the protective current exceed the limits of 3,5 mA .	No exceed 3.5 mA	N/A

IEC62368_1E – ATTACHMENT 1			
Clause	Requirement + Test	Result - Remark	Verdict
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. It is however accepted to provide the insulation external to the equipment by an adapter or an interconnection cable with galvanic isolator, which may be provided by a retailer, for example. The user manual shall then have the following or similar information in Norwegian and Swedish language respectively, depending on in what country the equipment is intended to be used in: “Apparatus connected to the protective earthing of the building installation through the mains connection or through other apparatus with a connection to protective earthing – and to a television distribution system using coaxial cable, may in some circumstances create a fire hazard. Connection to a television distribution system therefore has to be provided through a device providing electrical isolation below a certain frequency range (galvanic isolator, see EN 60728-11)” NOTE In Norway, due to regulation for CATV-installations, and in Sweden, a galvanic isolator shall provide electrical insulation below 5 MHz. The insulation shall withstand a dielectric strength of 1,5 kV r.m.s., 50 Hz or 60 Hz, for 1 min.	Not for connection to cable distribution systems.	N/A



IEC62368_1E – ATTACHMENT 1			
Clause	Requirement + Test	Result - Remark	Verdict
Cont.	Translation to Norwegian (the Swedish text will also be accepted in Norway): “Apparater som er koplet til beskyttelsesjord via nettplugg og/eller via annet jordtilkoplet utstyr – og er tilkoplet et koaksialbasert kabel-TV nett, kan forårsake brannfare. For å unngå dette skal det ved tilkopling av apparater til kabel-TV nett installeres en galvanisk isolator mellom apparatet og kabel-TV nettet.” Translation to Swedish: “Apparater som är kopplad till skyddsjord via jordat vägguttag och/eller via annan utrustning och samtidigt är kopplad till kabel-TV nät kan i vissa fall medföra risk för brand. För att undvika detta skall vid anslutning av apparaten till kabel-TV nät galvanisk isolator finnas mellan apparaten och kabel-TV nätet.”.	Not for connection to cable distribution systems.	N/A
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 IEC 60204-1 and 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	Not a direct plug-in equipment.	N/A

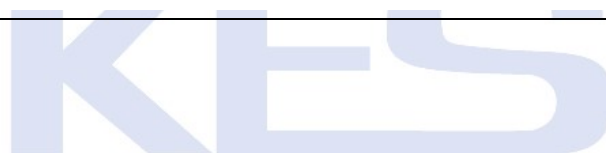
IEC62368_1E – ATTACHMENT 1			
Clause	Requirement + Test	Result - Remark	Verdict
G.4.2	Denmark To the end of the subclause the following is added: Supply cords of single phase appliances having a rated current not exceeding 13 A shall be provided with a plug according to DS 60884-2-D1:2011. CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a. If a single-phase equipment having a RATED CURRENT exceeding 13 A or if a polyphase equipment is provided with a supply cord with a plug, this plug shall be in accordance with the standard sheets DK 6-1a in DS 60884-2-D1 or EN 60309-2. Mains socket outlets intended for providing power to Class II apparatus with a rated current of 2,5 A shall be in accordance DS 60884-2-D1:2011 standard sheet DKA 1-4a. Other current rating socket outlets shall be in compliance with Standard Sheet DKA 1-3a or DKA 1-1c. Mains socket-outlets with earth shall be in compliance with DS 60884-2-D1:2011 Standard Sheet DK 1-3a, DK 1-1c, DK1-1d, DK 1-5a or DK 1-7a <i>Justification:</i> Heavy Current Regulations, Section 6c	Refer to General product information in this test report	N/A
G.4.2	United Kingdom To the end of the subclause the following is added: The plug part of direct plug-in equipment shall be assessed to BS 1363: Part 1, 12.1, 12.2, 12.3, 12.9, 12.11, 12.12, 12.13, 12.16, and 12.17, except that the test of 12.17 is performed at not less than 125 °C. Where the metal earth pin is replaced by an Insulated Shutter Opening Device (ISOD), the requirements of clauses 22.2 and 23 also apply.	Not a direct plug-in equipment.	N/A

IEC62368_1E – ATTACHMENT 1			
Clause	Requirement + Test	Result - Remark	Verdict
G.7.1	United Kingdom To the first paragraph the following is added: Equipment which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to BS 1363 by means of that flexible cable or cord shall be fitted with a 'standard plug' in accordance with the Plugs and Sockets etc. (Safety) Regulations 1994, Statutory Instrument 1994 No. 1768, unless exempted by those regulations. NOTE "Standard plug" is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.	Refer to General product information in this test report	N/A
G.7.1	Ireland To the first paragraph the following is added: Apparatus which is fitted with a flexible cable or cord shall be provided with a plug in accordance with Statutory Instrument 525: 1997, "13 A Plugs and Conversion Adapters for Domestic Use Regulations: 1997. S.I. 525 provides for the recognition of a standard of another Member State which is equivalent to the relevant Irish Standard	Refer to General product information in this test report	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 mm² is allowed for equipment which is rated over 10 A and up to and including 13 A.	Refer to General product information in this test report	N/A



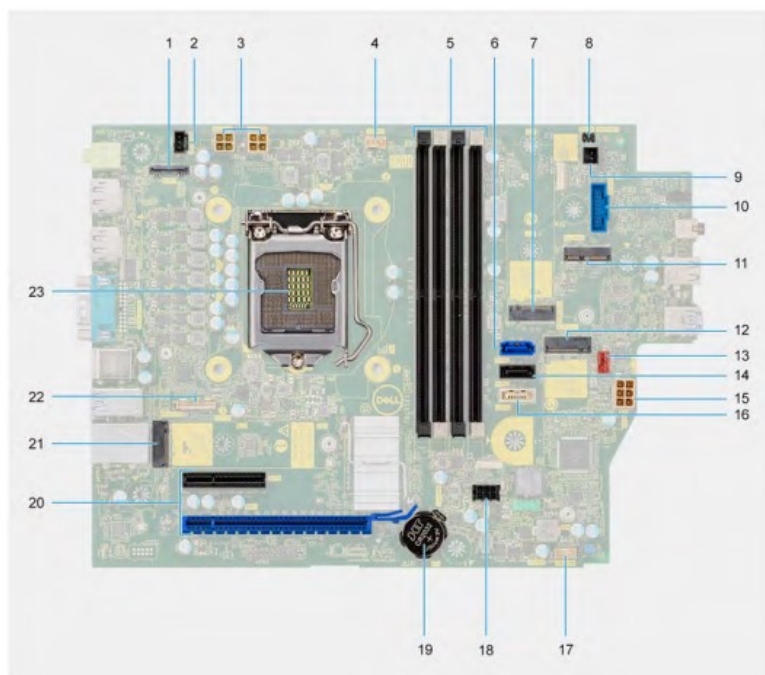
IEC62368_1E – ATTACHMENT 1			
Clause	Requirement + Test	Result - Remark	Verdict
ZC	ANNEX ZC, NATIONAL DEVIATIONS (EN)		N/A
10.5.2	Germany The following requirement applies: For the operation of any cathode ray tube intended for the display of visual images operating at an acceleration voltage exceeding 40 kV, authorization is required, or application of type approval (Bauartzulassung) and marking. <i>Justification:</i> German ministerial decree against ionizing radiation (Röntgenverordnung), in force since 2002-07-01, implementing the European Directive 96/29/EURATOM. NOTE Contact address: Physikalisch-Technische Bundesanstalt, Bundesallee 100, D-38116 Braunschweig, Tel.: Int+49-531-592-6320, Internet: http://www.ptb.de	No CRT used in the equipment.	N/A

IEC62368_1E – ATTACHMENT 1																																																								
Clause	Requirement + Test	Result - Remark	Verdict																																																					
ZD	IEC and CENELEC CODE DESIGNATIONS FOR FLEXIBLE CORDS (EN)		P																																																					
	<table><tr><th rowspan="2">Type of flexible cord</th><th colspan="2">Code designations</th></tr><tr><th>IEC</th><th>CENELEC</th></tr><tr><td colspan="3">PVC insulated cords</td></tr><tr><td>Flat twin tinsel cord</td><td>60227 IEC 41</td><td>H03VH-Y</td></tr><tr><td>Light polyvinyl chloride sheathed flexible cord</td><td>60227 IEC 52</td><td>H03VV-F H03VVH2-F</td></tr><tr><td>Ordinary polyvinyl chloride sheathed flexible cord</td><td>60227 IEC 53</td><td>H05VV-F H05VVH2-F</td></tr><tr><td colspan="3">Rubber insulated cords</td></tr><tr><td>Braided cord</td><td>60245 IEC 51</td><td>H03RT-F</td></tr><tr><td>Ordinary tough rubber sheathed flexible cord</td><td>60245 IEC 53</td><td>H05RR-F</td></tr><tr><td>Ordinary polychloroprene sheathed flexible cord</td><td>60245 IEC 57</td><td>H05RN-F</td></tr><tr><td>Heavy polychloroprene sheathed flexible cord</td><td>60245 IEC 66</td><td>H07RN-F</td></tr><tr><td colspan="3">Cords having high flexibility</td></tr><tr><td>Rubber insulated and sheathed cord</td><td>60245 IEC 86</td><td>H03RR-H</td></tr><tr><td>Rubber insulated, crosslinked PVC sheathed cord</td><td>60245 IEC 87</td><td>H03RV4-H</td></tr><tr><td>Crosslinked PVC insulated and sheathed cord</td><td>60245 IEC 88</td><td>H03V4V4-H</td></tr><tr><td colspan="3">Cords insulated and sheathed with halogen-free thermoplastic compounds</td></tr><tr><td>Light halogen-free thermoplastic insulated and sheathed flexible cords</td><td></td><td>H03Z1Z1-F H03Z1Z1H2-F</td></tr><tr><td>Ordinary halogen-free thermoplastic insulated and sheathed flexible cords</td><td></td><td>H05Z1Z1-F H05Z1Z1H2-F</td></tr></table>		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	P
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																																																						



Schematics & Block diagram - Attachment 2

System board layout



- | | |
|--|---|
| 1. Video connector | 2. Intrusion switch connector (Intruder) |
| 3. CPU power connector (ATX_CPU) | 4. CPU fan connector |
| 5. Memory slots (DIMM1, DIMM2, DIMM3, DIMM4) | 6. SATA 0 connector |
| 7. M.2 Solid-state drive connector | 8. Power switch connector (PWR_SW) |
| 9. Remote PWR switch connector | 10. Media card reader connector (Card_reader) |
| 11. M.2 WLAN connector | 12. M.2 2280 Solid-state drive connector |
| 13. System fan connector | 14. SATA 2 connector |
| 15. System power connector | 16. SATA 3 connector |
| 17. Internal speaker connector | 18. HDD/ODD power connector |
| 19. Coin cell battery | 20. PCI-e connectors |
| 21. M.2 Solid-state drive connector | 22. USB Type-C connector |
| 23. Processor socket (CPU) | |



Photographs - Attachment 3



< Front side view - Horizontal >



< Rear side view - Horizontal >

Photographs - Attachment 3



< Front side view - Vertical >



< Rear side view - Vertical >

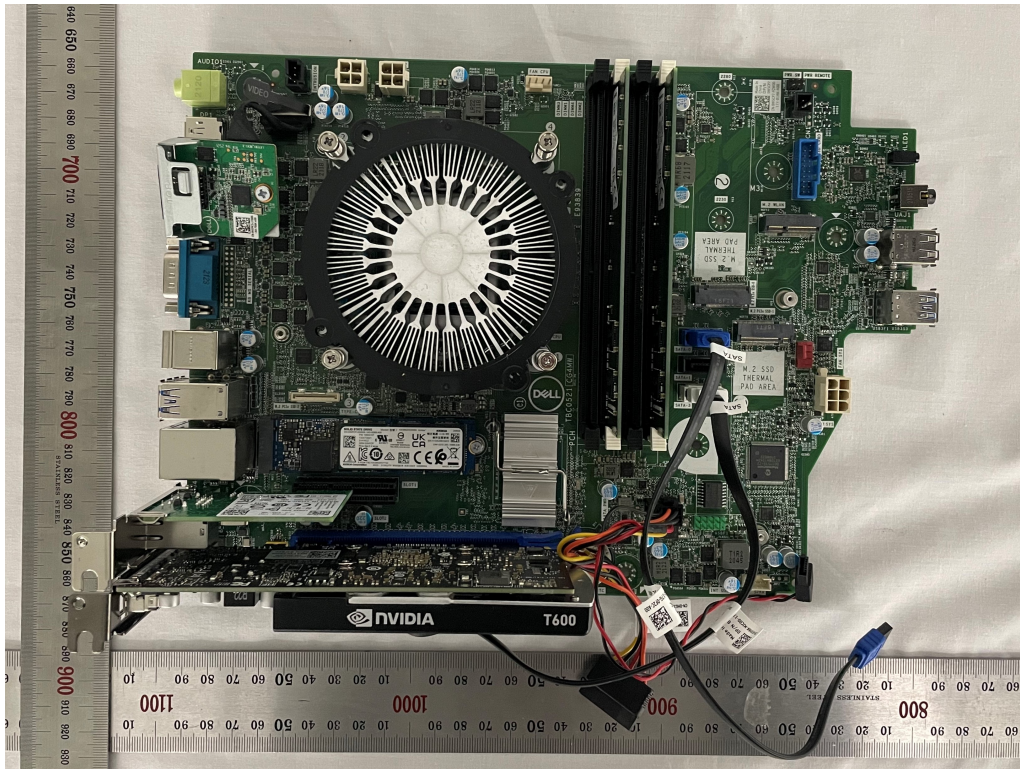
Photographs - Attachment 3



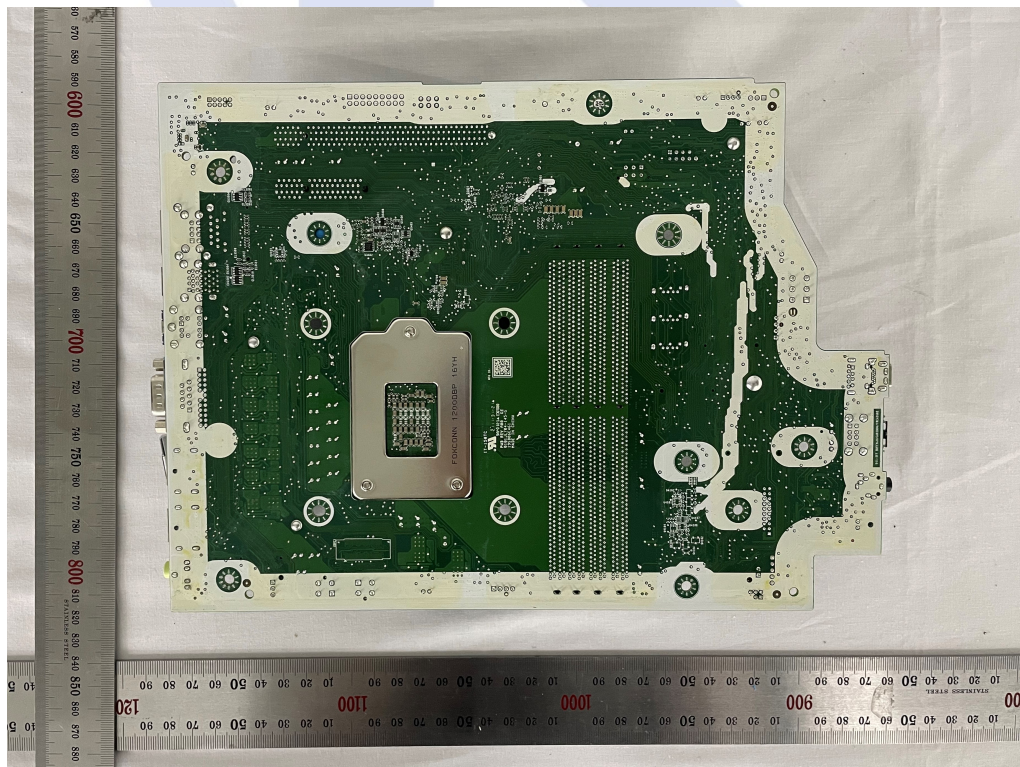
< Internal view - Internal circuit without side cover >

KES

Photographs - Attachment 3

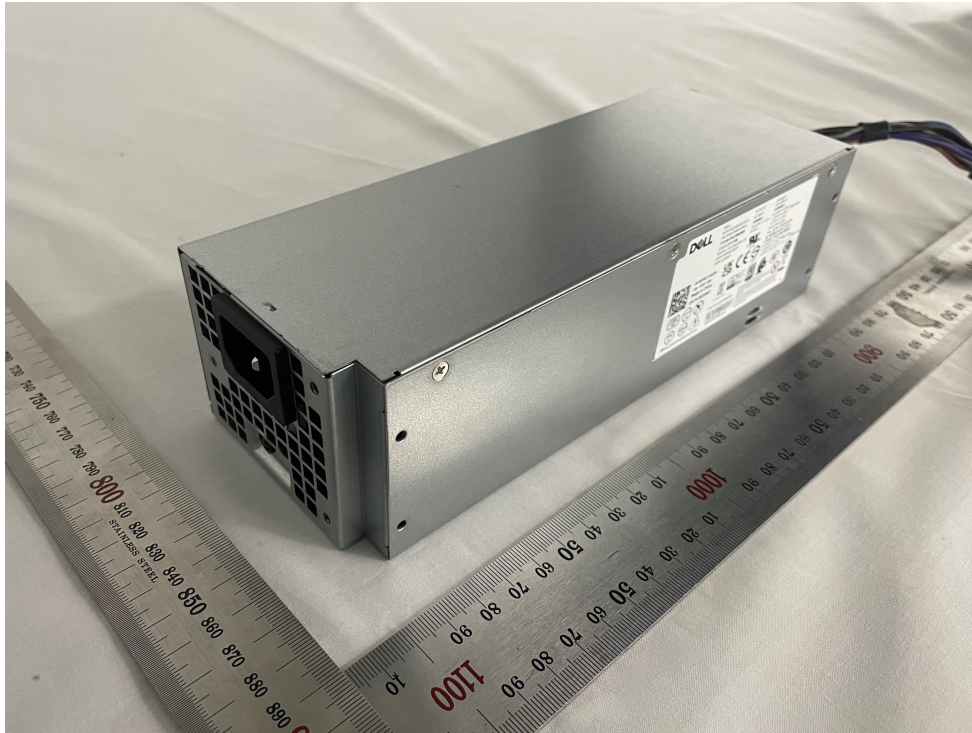


< Main board PCB top view >



< Main board PCB bottom view >

Photographs - Attachment 3



< Front side view - >

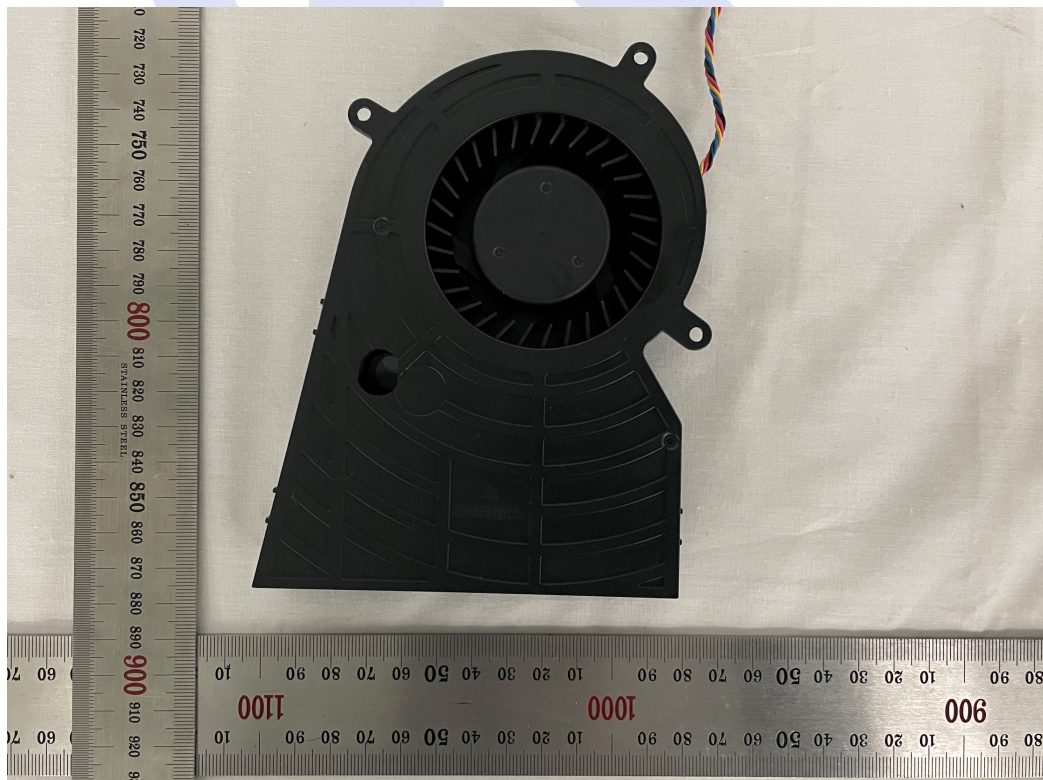


< Rear side view - >

Photographs - Attachment 3

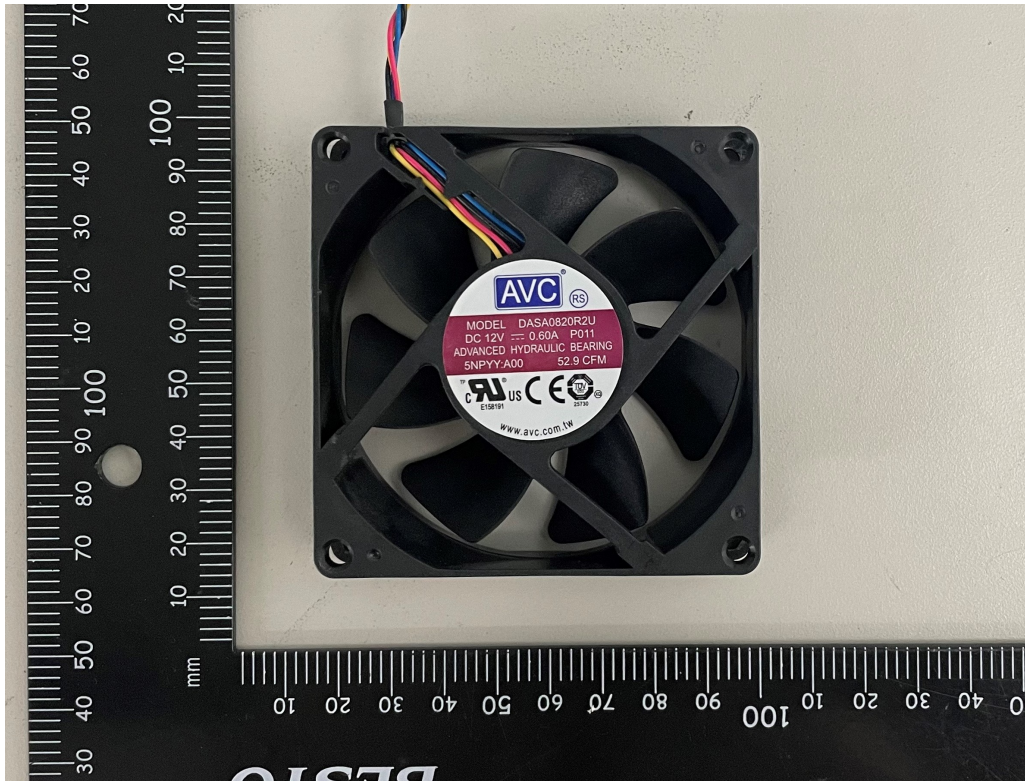


< CPU Fan top view >

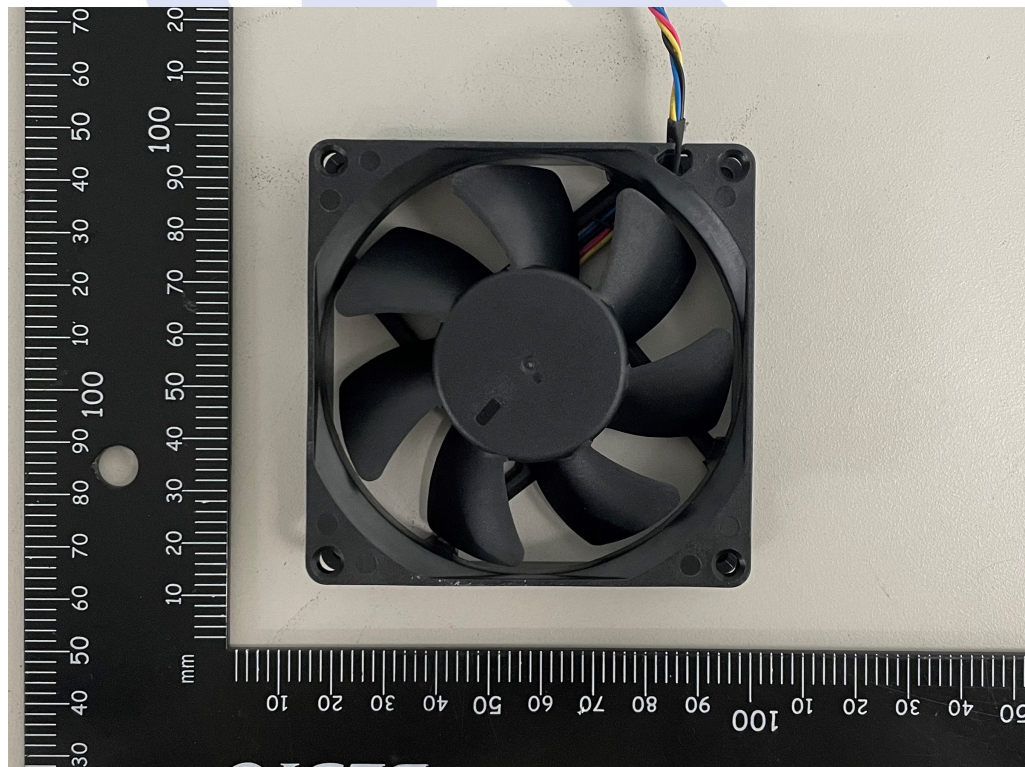


< CPU Fan bottom view >

Photographs - Attachment 3



< System Fan top view >



< System Fan bottom view >

Instruction / Installation Manual - Attachment 4**Before reading the user manual**

Be sure to read the following before reading the user manual.

- This manual is copyrighted by the manufacturer.
- This manual cannot be reproduced without permission.
- We are not responsible for any damage caused by using products other than the standard product or using the product for the purpose other than mentioned in the manual.
- If you need to open the case and touch the inside of the case for troubleshooting, always contact the dealer where you purchased the product for professional help.
- Do not allow water or liquid to come into contact with the connections of the product.
- Do not apply excessive force or shock.
- Do not pull the power cord by force.
- Do not disassemble the product.
- Use only within the rated input/output power range.
- Use only approved power cords.
- For products with an input ground, be sure to use it with a grounded power plug.

Notes, Cautions, and Warnings

Notes Provides important information which helps you use the product more efficiently.



Cautions Explains the risk of hardware damage or data loss while teaching how to prevent these problems.



Warnings The warning explains that there is a risk of property loss, bodily injury, or death.



Instruction / Installation Manual - Attachment 4

Configuration and Tips of User Manual

The manual of this product is composed as follows.

- Quick Guide
- SSM User Manual
- System User Manual

This User Manual is the default setting for user's guide. The User Manual contains the following in order:
If you want to apply the modification to the actual operating environment, refer to the SSM User Manual and the System User Manual.

- Checking components
- Product name and functions
- Guide to SSM operation and installation start



- The operating system and application software installed on this product are optimized for the hardware of this equipment.
Do not add or remove any hardware, or update the operating system, or install any other software.
Or it may cause the risk of electric shock and product performance degradation.

Power Supply

Plug all of the power cords into the back of the product, and press the power button.

If the product does not turn on, check the following.

1. Make sure that all the power cords have been plugged in firmly, and that they meet the required power specifications.
2. If you are using a power strip, make sure that the power strip is turned on.



- If all the power cords are plugged in firmly but the power does not turn on even after you have pressed the power button, follow the procedure described below.

This product can be operated in power protection mode to protect it in the event of a power outage or instability in the power supply.

This is similar to the operation of the fuse of the earth leakage circuit breaker. It is not a malfunction of the product.

Follow the steps described below.

- 1) Unplug all of the power cords from the back of the product.
 - If you are using a power strip, turn off the power strip.
- 2) Wait 10 seconds after the cords have been removed.
 - The protection circuit is now initialized, as the current inside the power supply has been discharged.
- 3) Plug in the power cords again.
 - If you are using a power strip, turn it on again.
- 4) Press the power button on the product.