TEST REPORT

IEC/EN 60950-1
Information technology equipment – Safety –
Part 1: General requirements

Report Number. ..... :	KES-SA-18T0221
Tested by (printed name and signature) ..... :	Jaehun, Lee
Approved by (printed name and signature) ..... :	Jaekwan, Cha
Date of issue..... :	2018-08-30
Testing Laboratory..... :	KES Co., Ltd. / Electrical Safety Laboratory
Address ..... :	473-21, Gayeo-ro, Yeoju-si, Gyeonggi-do, 12658, Republic of Korea
Applicant's name..... :	HANWHA TECHWIN Co., LTD.
Address ..... :	Pangyo-ro 319 Beon-gil 6, Sampyeong-dong, Bundang-gu, Seongnam (City), Gyeonggi Province, Korea
Manufacturer's name..... :	DREAM I SYSTEM CO., LTD
Address ..... :	#510.Daerung Post Tower 6. 50-3 Gasan-dong, Geumcheon-gu, Seoul, Korea
Test specification:	
Standard..... :	☒ EN 60950-1:2006+A11:2009+A1:2010+A12:2011+A2:2013
Test procedure ..... :	-
Non-standard test method..... :	N/A
Test Report Form No..... :	IEC60950_1F
Test Report Form(s) Originator ..... :	SGS Fimko Ltd
Master TRF ..... :	Dated 2014-02

Test item description .....:	NETWORK VIDEO RECORDER
Trade Mark..... :	Hanwha Techwin Co., Ltd.
Manufacturer ..... :	DREAM I SYSTEM CO., LTD
Model/Type reference..... :	PRP-5000H16
Ratings ..... :	100-240~, 50/60 Hz, 8-4A

This test report is not related to KOLAS

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

- Attachment 1 : European differences and national differences …….. 18 pages
- Attachment 2 : Photograph …… 6 pages

Summary of testing:	
Evaluation and testing of the equipped two power supply units (Clause 1.5.2)	The equipped two power supply units had been certified according to IEC 60950-1:2005+A1:2009 +A2:2013 standard. Therefore not evaluated for power supply units in this report (see appended table 1.5.1).
Power supply cord set (clause 1.5, 3.2.5.1)	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.
Safety instructions (clause 1.7.2)	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.
Language of safety instructions and marking (Clause 1.7.2.1)	The PRP-5000H16 model does not comply with the requirements for Finland, Norway and Sweden National Differences (No words marking stating that the apparatus must be connected to an earthed MAINS socket-outlet). Only English for warning marking used. Therefore, this model is will be sold in all countries market except for Finland, Norway and Sweden.

Copy of marking plate:

Model difference: N/A

Test item particulars .....:	
Equipment mobility .....:	[] movable [] hand-held [] transportable [x] stationary [] for building-in [] direct plug-in
Connection to the mains.....:	[] pluggable equipment [x] type A [] type B [] permanent connection [x] detachable power supply cord [] non-detachable power supply cord [] not directly connected to the mains
Operating condition.....:	[x] continuous [] rated operating / resting time:
Access location .....:	[x] operator accessible [] restricted access location
Over voltage category (OVC) .....:	[]OVC I [x] OVC II [] OVC III [] OVC IV [] other:
Mains supply tolerance (%) or absolute mains supply values .....:	+10 %, -10 %
Tested for IT power systems .....:	[] Yes [x] No
IT testing, phase-phase voltage (V) .....:	N/A
Class of equipment .....:	[x] Class I [] Class II [] Class III [] Not classified
Considered current rating of protective device as part of the building installlation (A) .....:	-
Pollution degree (PD) .....:	[] PD 1 [x] PD 2 [] PD 3
IP protection class .....:	IPX0
Altitude during operation (m) .....:	Up to 2000 m
Altitude of test laboratory (m) .....:	Up to 2000 m
Mass of equipment (kg) .....:	Approx. 27.4 kg (with in HDD)
Possible test case verdicts:	
- test case does not apply to the test object.....:	N/A (Not Applicable)
- test object does meet the requirement .....:	P (Pass)
- test object does not meet the requirement .....:	F (Fail)
Testing .....:	
Date of receipt of test item.....:	2018-04-10
Date(s) of performance of tests.....:	2018-05-16 to 2018-08-20

General remarks:

The test results presented in this report relate only to the object tested.
This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.
"(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.

Name and address of factory(ies):	DREAM I SYSTEM CO., LTD #510.Daerung Post Tower 6. 50-3 Gasan-dong, Geumcheon-gu, Seoul, Korea

General product information:

Report Summary:

- All applicable tests according to the referenced standard(s) have been carried out.
- The internal power supply units are CB certified components, see appended table 1.5.1 for details.
- The outputs of data ports are in accordance with the Limited Power Sources (Clause 2.5), see appended table 2.5 for details.
- Max. normal load condition as follows:
  1) Image recording mode with CCTV cameras delivered by manufacturer,
  2) Maximum load applied to each USB 3.0 port is 2.0 A,
  3) Terminals of RS232 and HDMI were connected of monitors respectively,
  4) Hot swap HDD (3.5-inch x 16) installed to the front HDD slots.
- The maximum ambient temperature permitted by manufacturer (T_{ma}) : 40 °C

Product Descriptions:

- The NETWORK VIDEO RECORDER was evaluated to Class I construction.
- The operator is only intended to replace the pluggable devices (mass storage drives) from front side of the unit, and is not intended to access the interior of the unit for any operator servicing. All interior servicing is to be performed by qualified service personnel, which requires the use of a tool.
- Port configurations:
  On front panel: USB 2.0 port x 2, Hot swap 3.5-inch HDD x 16
  On rear side: PS2 port x 1, VGA port x 1, DVI port x 1, HDMI port x 1, USB 3.0 port x 4
  Optical SPDIF output port x 1, Audio IO port x 5, 1000BASE-T RJ-45 port x 2
- The drive carrier accommodates 3.5-inch drives. SAS or SATA, 12Gb/s or 6Gb/s or 3Gb/s, HDD or SSD; Max 16 pcs

Technical Considerations:

- Exposure to extreme temperatures, excessive dust, moisture or vibration; to flammable gases; to corrosive or explosive atmospheres: This equipment is intended to operate in a “normal” environment (Offices and homes).
- Electro-medical equipment connected to the patient: The equipment is not an electro medical equipment intended to be physically connected to patient.
- Equipment used in vehicles, ships or aircrafts, in tropical countries, or at elevations > 2 000 m: This equipment is intended to operate up to 2000 m and in a “normal” environment (Offices and homes).

Abbreviations used in the report:

- normal conditions	N.C.	- single fault conditions	S.F.C
- functional insulation	OP	- basic insulation	BI
- double insulation	DI	- supplementary insulation	SI
- between parts of opposite polarity	BOP	- reinforced insulation	RI

Indicate used abbreviations (if any)

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1	**GENERAL**		P
1.5	**Components**		P
1.5.1	General		P
	Comply with IEC 60950-1 or relevant component standard	(see appended table 1.5.1)	P
1.5.2	Evaluation and testing 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 IEC 60950-1 and the relevant component standard. Components, for which no relev ant IEC-standard exists, have been teste d under the conditions occurring in the equipment, using applica ble parts of IEC 60950-1.	P
1.5.3	Thermal controls	No thermal controls.	N/A
1.5.4	Transformers	Refer to certified power supply units test reports.	P
1.5.5	Interconnecting cables		P
1.5.6	Capacitors bridging insulation	Refer to certified power supply units test reports.	P
1.5.7	Resistors bridging insulation	Refer below:	P
1.5.7.1	Resistors bridging functional, basic or supplementary insulation	Refer to certified power supply units test reports.	P
1.5.7.2	Resistors bridging double or reinforced insulation between a.c. mains and other circuits	No such parts	N/A
1.5.7.3	Resistors bridging double or reinforced insulation between a.c. mains and antenna or coaxial cable	No such parts	N/A
1.5.8	Components in equipment for IT power systems		N/A
1.5.9	Surge suppressors	No such parts	N/A
1.5.9.1	General		N/A
1.5.9.2	Protection of VDRs		N/A
1.5.9.3	Bridging of functional insulation by a VDR		N/A
1.5.9.4	Bridging of basic insulation by a VDR		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
1.5.9.5	Bridging of supplementary, double or reinforced insulation by a VDR		N/A
1.6	**Power interface**		P
1.6.1	AC power distribution systems	TN system.	—
1.6.2	Input current	(see appended table 1.6.2)	P
1.6.3	Voltage limit of hand-held equipment	Not hand-held equipment	N/A
1.6.4	Neutral conductor	Basic inaulation for rated vlotage between earthed parts and primary phases. Refer to certified power supply units test reports.	P
1.7	**Marking and instructions**		P
1.7.1	Power rating and identification markings	The required marking is located on the outside surface of the equipment.	P
1.7.1.1	Power rating marking	Refer below:	P
	Multiple mains supply connections.....:	Single mains supply connection.	N/A
	Rated voltage(s) or voltage range(s) (V) ..... :	100-240 V~	P
	Symbol for nature of supply, for d.c. only..... :	The equipment is for a.c. supply.	N/A
	Rated frequency or rated frequency range (Hz) ... :	50/60 Hz	P
	Rated current (mA or A) ..... :	8-4 A	P
1.7.1.2	Identification markings	Refer below:	P
	Manufacturer’s name or trade-mark or identification mark ..... :	Hanwha Techwin Co., Ltd. (Responsible vendor's name)	P
	Model identification or type reference ..... :	PRP-5000H16	P
	Symbol for Class II equipment only ..... :	Class I equipment	N/A
	Other markings and symbols ..... :	The additional marking does not give rise to misunderstandings	P
1.7.1.3	Use of graphical symbols		P
1.7.2	Safety instructions and marking	Refer below:	P
1.7.2.1	General	The text is required because safety relies on connection to protective earth. The text is applied, refer to summary of testing and copy of marking plate.	P
1.7.2.2	Disconnect devices	Appliance inlet is provided as disconnection device.	P

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Clause	Requirement + Test	Result - Remark	Verdict
1.7.2.3	Overcurrent protective device	The equipment is Pluggable Equipment Type A.	N/A
1.7.2.4	IT power distribution systems		N/A
1.7.2.5	Operator access with a tool	All areas containing hazard(s) are inaccessible to the operator.	P
1.7.2.6	Ozone	The equipment not containing ozone.	N/A
1.7.3	Short duty cycles	The equipment is intended for continuous operation.	N/A
1.7.4	Supply voltage adjustment ..... :	No voltage/frequency selector.	N/A
	Methods and means of adjustment; reference to installation instructions ..... :		N/A
1.7.5	Power outlets on the equipment ..... :	No power supply outlets	N/A
1.7.6	Fuse identification (marking, special fusing characteristics, cross-reference) ..... :	Fuse marking on the approved power supply. Refer to certified power supply units test reports.	P
1.7.7	Wiring terminals	Refer to below;	P
1.7.7.1	Protective earthing and bonding terminals ..... :	Refer to certified power supply units test reports.	P
1.7.7.2	Terminals for a.c. mains supply conductors	The equipment with appliance inlet is intended to connect with detachable type power supply cord.	N/A
1.7.7.3	Terminals for d.c. mains supply conductors	Mains from AC source only.	N/A
1.7.8	Controls and indicators	Refer below;	P
1.7.8.1	Identification, location and marking ..... :	The marking and indication of the swithch for function is clear.	P
1.7.8.2	Colours ..... :	Green(power ON condition)	P
1.7.8.3	Symbols according to IEC 60417.....:	The functional switch is marked ⏻ which complies with IEC 60417-5009.	P
1.7.8.4	Markings using figures .....:	No controls use figures.	N/A
1.7.9	Isolation of multiple power sources .....:	Each power supply module has individual appliance inlet regarded as disconnect device. The prominent marking is provided.	P
1.7.10	Thermostats and other regulating devices .....:	No such devices	N/A
1.7.11	Durability	15 s with water and then 15 s with petroleum sprit Legible/durable and no curling after the test	P

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Clause	Requirement + Test	Result - Remark	Verdict
1.7.12	Removable parts	Removable part is not attached label	P
1.7.13	Replaceable batteries .....:	The lithium battery (for RTC) is replaceable by service person. Warning text provided in the ser vice manual.	P
	Language(s) .....:	English Language shall be accepted for the country in which the equipm ent is to be sold.	—
1.7.14	Equipment for restricted access locations .....:	Equipment not intended for installation in restricted access locations	N/A
2	**PROTECTION FROM HAZARDS**		P
2.1	**Protection from electric shock and energy hazards**		P
2.1.1	Protection in operator access areas	Refer below;	P
2.1.1.1	Access to energized parts		P
	Test by inspection ..... :	Operator cannot access hazard parts	P
	Test with test finger (Figure 2A) ..... :	No access with test finger	P
	Test with test pin (Figure 2B) ..... :	No access with test pin	P
	Test with test probe (Figure 2C) ..... :	No TNV circuit in the equipment	N/A
2.1.1.2	Battery compartments	No TNV circuit in the equipment	N/A
2.1.1.3	Access to ELV wiring	No internal wiring at ELV accessible to the operator	N/A
	Working voltage (Vpeak or Vrms); minimum distance through insulation (mm)		—
2.1.1.4	Access to hazardous voltage circuit wiring	All accessible parts are separated from internal wiring at hazardous voltage by double or reinforced insulation, comply with 2.10.5 and 3.1.4. Refer to certified power supply units test reports.	P
2.1.1.5	Energy hazards ..... :	No energy hazard in operator acc ess area. Checked by means of the test finger.	P
2.1.1.6	Manual controls	No shafts of knobs etc. at ELV or hazardous voltage.	N/A
2.1.1.7	Discharge of capacitors in equipment	Comply with the requirement. Refer to certified power supply units test reports	P
	Measured voltage (V); time-constant (s)..... :		—

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Clause	Requirement + Test	Result - Remark	Verdict
2.1.1.8	Energy hazards – d.c. mains supply	The equipment is not intended to connect to d.c. mains.	N/A
	a) Capacitor connected to the d.c. mains supply .. :		N/A
	b) Internal battery connected to the d.c. mains supply ..... :		N/A
2.1.1.9	Audio amplifiers ..... :	No audio amplifiers	N/A
2.1.2	Protection in service access areas	Checked by inspection, unintentional contact is unlikely during service operations.	P
2.1.3	Protection in restricted access locations	Not intended for installation in restricted access locations	N/A
2.2	**SELV circuits**		P
2.2.1	General requirements	SELV limits are not exceed both under normal operating conditions and after a single fault conditions. Refer to certified power supply units test reports.	P
2.2.2	Voltages under normal conditions (V) ..... :	Within SELV limits. Refer to certified power supply units test reports.	P
2.2.3	Voltages under fault conditions (V) ..... :	Within SELV limits. Refer to certified power supply units test reports.	P
2.2.4	Connection of SELV circuits to other circuits .....:	SELV circuits are only connected to other SELV circuits	P
2.3	**TNV circuits**		N/A
2.3.1	Limits	No TNV circuits	N/A
	Type of TNV circuits ..... :		—
2.3.2	Separation from other circuits and from accessible parts		N/A
2.3.2.1	General requirements		N/A
2.3.2.2	Protection by basic insulation		N/A
2.3.2.3	Protection by earthing		N/A
2.3.2.4	Protection by other constructions ..... :		N/A
2.3.3	Separation from hazardous voltages		N/A
	Insulation employed ..... :		—
2.3.4	Connection of TNV circuits to other circuits		N/A
	Insulation employed ..... :		—
2.3.5	Test for operating voltages generated externally		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
2.4	**Limited current circuits**		P
2.4.1	General requirements	Refer to certified power supply units test reports.	P
2.4.2	Limit values		N/A
	Frequency (Hz) ..... :		—
	Measured current (mA)..... :		—
	Measured voltage (V)..... :		—
	Measured circuit capacitance (nF or μF) ..... :		—
2.4.3	Connection of limited current circuits to other circuits		N/A
2.5	**Limited power sources**		P
	a) Inherently limited output	VGA, DVI, Audio, PS2, SPDIF are inherently limited, only for signal transmission.	P
	b) Impedance limited output	HDMI, USB ports are limited by impedance (polyswitch).	P
	c) Regulating network or IC current limiter, limits output under normal operating and single fault condition	No such parts used.	N/A
	Use of integrated circuit (IC) current limiters	No such parts used.	N/A
	d) Overcurrent protective device limited output	No such parts used.	N/A
	Max. output voltage (V), max. output current (A), max. apparent power (VA)..... :	(see appended table 2.5)	—
	Current rating of overcurrent protective device (A) .:	No such parts used.	—
2.6	**Provisions for earthing and bonding**		P
2.6.1	Protective earthing	Accessible conductive parts are reliably connected to protective earthing.	P
2.6.2	Functional earthing	Functional earthing is separated from hazardous voltages by reinforced insulation.	P
	Use of symbol for functional earthing .....:		N/A
2.6.3	Protective earthing and protective bonding conductors		P
2.6.3.1	General	Refer below;	N/A
2.6.3.2	Size of protective earthing conductors	Refer to Summary of Testing	N/A
	Rated current (A), cross-sectional area (mm^2), AWG ..... :		—

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Clause	Requirement + Test	Result - Remark	Verdict
2.6.3.3	Size of protective bonding conductors	Protective bonding conductor is complied with the requirements of 2.6.3.4.	P
	Rated current (A), cross-sectional area (mm^2), AWG ..... :		—
	Protective current rating (A), cross-sectional area (mm^2), AWG ..... :		
2.6.3.4	Resistance of earthing conductors and their terminations; resistance (Ω), voltage drop (V), test current (A), duration (min)..... :	Power supply appliance inlet ground pin to metal chassis: 10.0 mΩ, 0.32 V (32 A, 2 min)	P
2.6.3.5	Colour of insulation ..... :	Investigated in the approved power supply. (The Green/ Yellow wire was installed inside an ertified power supply units)	P
2.6.4	Terminals	Refer below;	P
2.6.4.1	General	The equipment provided with an appliance inlet. Refer to certifie d power supply units test reports .	P
2.6.4.2	Protective earthing and bonding terminals	Appliance inlet is considered as protective earthing terminal. Refer to certified power supply units test reports.	P
	Rated current (A), type, nominal thread diameter (mm) ..... :	Appliance inlet is considered as protective earthing terminal.	—
2.6.4.3	Separation of the protective earthing conductor from protective bonding conductors	Protective earthing conductor is in appliance inlet. Green/yellow wire for protective bonding conductor from ground pin of appliance inlet to metal chassis of certified power supply units	P
2.6.5	Integrity of protective earthing	Refer below;	P
2.6.5.1	Interconnection of equipment	This equipment has its own earthing connection. Any other units connected via the interconnecting cable to other unit shall provide SELV only.	P
2.6.5.2	Components in protective earthing conductors and protective bonding conductors	No components	P
2.6.5.3	Disconnection of protective earth	It is not possible to disconnect protective earth without disconn ecting mains, appliance inlet is used as disconnect device.	P

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Clause	Requirement + Test	Result - Remark	Verdict
2.6.5.4	Parts that can be removed by an operator	No operator removable parts with protective earth connection except supply cord.	N/A
2.6.5.5	Parts removed during servicing	Protective earthed parts cannot be removed in a way which impairs safety.	P
2.6.5.6	Corrosion resistance	No risk of corrosion.	P
2.6.5.7	Screws for protective bonding	Adequate connection of protective bonding.	P
2.6.5.8	Reliance on telecommunication network or cable distribution system	Protective earthing does not rely on a telecommunication network or cable distribution system.	N/A
2.7	**Overcurrent and earth fault protection in primary circuits**		P
2.7.1	Basic requirements		P
	Instructions when protection relies on building installation	Protective devices are integrated in the equipment. Refer to certified power supply units test reports.	P
2.7.2	Faults not simulated in 5.3.7		P
2.7.3	Short-circuit backup protection	Short-circuit backup protection is considered building installation	P
2.7.4	Number and location of protective devices ..... :	Overcurrent is protected by one building-in fuse of each one module, earth fault is protected by fuse or circuit breaker in the phase of the building installation .	P
2.7.5	Protection by several devices	Only one fuse for each certified power supply units	N/A
2.7.6	Warning to service personnel ..... :		N/A
2.8	**Safety interlocks**		N/A
2.8.1	General principles	No safety interlocks provided	N/A
2.8.2	Protection requirements		N/A
2.8.3	Inadvertent reactivation		N/A
2.8.4	Fail-safe operation		N/A
	Protection against extreme hazard		N/A
2.8.5	Moving parts		N/A
2.8.6	Overriding		N/A
2.8.7	Switches, relays and their related circuits		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
2.8.7.1	Separation distances for contact gaps and their related circuits (mm) .....:		N/A
2.8.7.2	Overload test		N/A
2.8.7.3	Endurance test		N/A
2.8.7.4	Electric strength test		N/A
2.8.8	Mechanical actuators		N/A
2.9	**Electrical insulation**		P
2.9.1	Properties of insulating materials	Natural rubber, asbestos or hygr oscopic materials are not used.	P
2.9.2	Humidity conditioning	Humidity treatment performed for 48 h.	P
	Relative humidity (%), temperature (°C) .....:	93 % R.H, 30 °C	—
2.9.3	Grade of insulation	Insulation is considered to be functional, basic, supplementary, reinforced or double insulation.	P
2.9.4	Separation from hazardous voltages	The accessible conductive parts, including SELV circuits and their related windings, are separated from parts at hazardous voltage by double or reinforced insulation.	P
	Method(s) used .....:	Method 1.	—
2.10	**Clearances, creepage distances and distances through insulation**		P
2.10.1	General	Evaluation of the approved power supply	P
2.10.1.1	Frequency .....:	30 kHz or less	P
2.10.1.2	Pollution degrees .....:	Pollution degree 2	P
2.10.1.3	Reduced values for functional insualtion	The functional insulations compl y with 5.3.4 a) and c).	P
2.10.1.4	Intervening unconnected conductive parts	Complied with certified power supply units	P
2.10.1.5	Insulation with varying dimensions	No such insulation is provided	N/A
2.10.1.6	Special separation requirements		N/A
2.10.1.7	Insulation in circuits generating starting pulses	No such circuits	N/A
2.10.2	Determination of working voltage	Refer to certified power supply units test reports.	P
2.10.2.1	General		P
2.10.2.2	RMS working voltage	Refer to certified power supply units test reports.	P

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Clause	Requirement + Test	Result - Remark	Verdict
2.10.2.3	Peak working voltage	Refer to certified power supply units test reports.	P
2.10.3	Clearances	Refer to certified power supply units test reports.	P
2.10.3.1	General	Considered.	P
2.10.3.2	Mains transient voltages	Equipment is Overvoltage Category II (2 500V).	P
	a) AC mains supply .....:		P
	b) Earthed d.c. mains supplies .....:		N/A
	c) Unearthed d.c. mains supplies .....:		N/A
	d) Battery operation .....:		N/A
2.10.3.3	Clearances in primary circuits	Refer to certified power supply units test reports.	P
2.10.3.4	Clearances in secondary circuits	Refer to certified power supply units test reports.	P
2.10.3.5	Clearances in circuits having starting pulses		N/A
2.10.3.6	Transients from a.c. mains supply .....:	Refer to certified power supply units test reports.	P
2.10.3.7	Transients from d.c. mains supply .....:		N/A
2.10.3.8	Transients from telecommunication networks and cable distribution systems .....:	Not connected to telecommunication networks or cable distribution systems.	N/A
2.10.3.9	Measurement of transient voltage levels	Not used.	N/A
	a) Transients from a mains suplply		N/A
	For an a.c. mains supply .....:		N/A
	For a d.c. mains supply .....:		N/A
	b) Transients from a telecommunication network :		N/A
2.10.4	Creepage distances	Refer to certified power supply units test reports.	P
2.10.4.1	General		P
2.10.4.2	Material group and comparative tracking index	Refer to certified power supply units test reports.	P
	CTI tests .....:		—
2.10.4.3	Minimum creepage distances	Refer to certified power supply units test reports.	P
2.10.5	Solid insulation	Refer to certified power supply units test reports.	P
2.10.5.1	General		P
2.10.5.2	Distances through insulation		P
2.10.5.3	Insulating compound as solid insulation		P

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Clause	Requirement + Test	Result - Remark	Verdict
2.10.5.4	Semiconductor devices		P
2.10.5.5.	Cemented joints		P
2.10.5.6	Thin sheet material – General	Refer to certified power supply units test reports.	P
2.10.5.7	Separable thin sheet material	Refer to certified power supply units test reports.	P
	Number of layers (pcs) .....:		—
2.10.5.8	Non-separable thin sheet material		N/A
2.10.5.9	Thin sheet material – standard test procedure		N/A
	Electric strength test		—
2.10.5.10	Thin sheet material – alternative test procedure	Considered.	P
	Electric strength test	Refer to certified power supply units test reports.	—
2.10.5.11	Insulation in wound components	Refer to sub-clause 2.10.5.12.	P
2.10.5.12	Wire in wound components	Refer to certified power supply units test reports.	P
	Working voltage .....:		N/A
	a) Basic insulation not under stress .....:		N/A
	b) Basic, supplemetary, reinforced insulation .....:		N/A
	c) Compliance with Annex U .....:		N/A
	Two wires in contact inside wound component; angle between 45° and 90° .....:		N/A
2.10.5.13	Wire with solvent-based enamel in wound components	No such parts.	N/A
	Electric strength test		—
	Routine test		N/A
2.10.5.14	Additional insulation in wound components	No such additional insulation is used.	N/A
	Working voltage .....:		N/A
	- Basic insulation not under stress .....:		N/A
	- Supplemetary, reinforced insulation .....:		N/A
2.10.6	Construction of printed boards		P
2.10.6.1	Uncoated printed boards		P
2.10.6.2	Coated printed boards		N/A
2.10.6.3	Insulation between conductors on the same inner surface of a printed board		N/A
2.10.6.4	Insulation between conductors on different layers of a printed board		N/A
	Distance through insulation		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Number of insulation layers (pcs).....:		
2.10.7	Component external terminations		N/A
2.10.8	Tests on coated printed boards and coated components		N/A
2.10.8.1	Sample preparation and preliminary inspection		N/A
2.10.8.2	Thermal conditioning		N/A
2.10.8.3	Electric strength test		N/A
2.10.8.4	Abrasion resistance test		N/A
2.10.9	Thermal cycling		N/A
2.10.10	Test for Pollution Degree 1 environment and insulating compound		N/A
2.10.11	Tests for semiconductor devices and cemented joints		N/A
2.10.12	Enclosed and sealed parts	Refer to certified power supply units test reports.	P
3	**WIRING, CONNECTIONS AND SUPPLY**		P
3.1	**General**		P
3.1.1	Current rating and overcurrent protection	All internal wires are suitable for current intended to be carried	P
3.1.2	Protection against mechanical damage	Wires do not touch sharp edges and heatshinks which could dam age the insulation and cause hazard.	P
3.1.3	Securing of internal wiring	The wires are secured by two fixi ng method so that a loosening of the terminal connection is unlikely.	P
3.1.4	Insulation of conductors	The insulation of the individual conductors is suitable for the ap plication and the working voltag e.	P
3.1.5	Beads and ceramic insulators	No beads or similar ceramic insulations on conductors.	N/A
3.1.6	Screws for electrical contact pressure	No electrical contact pressure.	N/A
3.1.7	Insulating materials in electrical connections	No contact pressure through insulating material.	N/A
3.1.8	Self-tapping and spaced thread screws	No self-tapping and spaced thread screws used for electrical connections.	N/A
3.1.9	Termination of conductors	All conductors are reliable secured.	P

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Clause	Requirement + Test	Result - Remark	Verdict
	10 N pull test	No hazards caused hereby.	—
3.1.10	Sleeving on wiring	Not used.	N/A
3.2	**Connection to a mains supply**		P
3.2.1	Means of connection		P
3.2.1.1	Connection to an a.c. mains supply	Provided with an appliance inlet.	P
3.2.1.2	Connection to a d.c. mains supply	No connection to a d.c. mains supply	N/A
3.2.2	Multiple supply connections	Each power supply module has individual appliance inlet regard ed as disconnect device	P
3.2.3	Permanently connected equipment	Not permanent connected equip ment	N/A
	Number of conductors, diameter of cable and conduits (mm) ..... :		—
3.2.4	Appliance inlets	The appliance inlet complies with IEC/EN 60320-1	P
3.2.5	Power supply cords	Refer to Summary of Testing.	N/A
3.2.5.1	AC power supply cords		N/A
	Type ..... :		—
	Rated current (A), cross-sectional area (mm^2), AWG ..... :		—
3.2.5.2	DC power supply cords		N/A
3.2.6	Cord anchorages and strain relief	Appliance inlet is used.	N/A
	Mass of equipment (kg), pull (N) ..... :		—
	Longitudinal displacement (mm) ..... :		—
3.2.7	Protection against mechanical damage	The equipment provided with appliance inlet.	N/A
3.2.8	Cord guards	The equipment provided with appliance inlet.	N/A
	Diameter or minor dimension D (mm); test mass (g) ..... :		—
	Radius of curvature of cord (mm)..... :		—
3.2.9	Supply wiring space	The equipment provided with appliance inlet.	N/A
3.3	**Wiring terminals for connection of external conductors**		N/A
3.3.1	Wiring terminals	Equipment provided with an appliance inlet	N/A
3.3.2	Connection of non-detachable power supply cords		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
3.3.3	Screw terminals		N/A
3.3.4	Conductor sizes to be connected		N/A
	Rated current (A), cord/cable type, cross-sectional area (mm^2)..... :		—
3.3.5	Wiring terminal sizes		N/A
	Rated current (A), type, nominal thread diameter (mm) ..... :		—
3.3.6	Wiring terminal design		N/A
3.3.7	Grouping of wiring terminals		N/A
3.3.8	Stranded wire		N/A
3.4	**Disconnection from the mains supply**		P
3.4.1	General requirement	Refer below;	P
3.4.2	Disconnect devices	used an appliance inlet	P
3.4.3	Permanently connected equipment	Not Permanently connected equipment	N/A
3.4.4	Parts which remain energized	No remaining parts with hazardous voltage in the equipment.	N/A
3.4.5	Switches in flexible cords		N/A
3.4.6	Number of poles - single-phase and d.c. equipment	The disconnect device disconnects both poles simultaneously.	P
3.4.7	Number of poles - three-phase equipment	Single-phase equipment.	N/A
3.4.8	Switches as disconnect devices	No switch or the switch is not a disconnect device.	N/A
3.4.9	Plugs as disconnect devices	The appliance inlet is considered to be the disconnect device.	N/A
3.4.10	Interconnected equipment	Not Interconnected equipment	N/A
3.4.11	Multiple power sources	The prominent marking is provided.	P
3.5	**Interconnection of equipment**		P
3.5.1	General requirements	Considered.	P
3.5.2	Types of interconnection circuits ..... :	Interconnection for SELV and limited current circuits.	P
3.5.3	ELV circuits as interconnection circuits	No ELV interconnections.	N/A
3.5.4	Data ports for additional equipment	Considered. Refer to Cl. 2.5.	P

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Clause	Requirement + Test	Result - Remark	Verdict
4	**PHYSICAL REQUIREMENTS**		P
4.1	**Stability**		P
	Angle of 10°	Unit does not overbalance at 10°.	P
	Test force (N) ..... :	Equipment is not a floor standing unit.	N/A
4.2	Mechanical strength		P
4.2.1	General	Refer below;	P
	Rack-mounted equipment.		N/A
4.2.2	Steady force test, 10 N	Applied	P
4.2.3	Steady force test, 30 N	No hazard, test is performed in each internal enclosure.	P
4.2.4	Steady force test, 250 N	No hazard. The test is performed at all sides of enclosure.	P
4.2.5	Impact test	Refer below;	P
	Fall test	No safety relevant damages.	P
	Swing test	No safety relevant damages.	P
4.2.6	Drop test; height (mm) ..... :	Not hand-held or direct plug-in equipment.	N/A
4.2.7	Stress relief test	Enclosure is metal.	N/A
4.2.8	Cathode ray tubes	CRT(s) not used in the equipment.	N/A
	Picture tube separately certified ..... :		N/A
4.2.9	High pressure lamps	No high pressure lamps in the equipment.	N/A
4.2.10	Wall or ceiling mounted equipment; force (N) ..... :	Not intended to be mounted on a wall or ceiling.	N/A
4.3	**Design and construction**		P
4.3.1	Edges and corners	All edges and corners are rounded and/or smoothed.	P
4.3.2	Handles and manual controls; force (N) ..... :	No handles, grips, levers or the like that might create a hazard provided	N/A
4.3.3	Adjustable controls	No adjustable controls provided	N/A
4.3.4	Securing of parts		P
4.3.5	Connection by plugs and sockets	SELV connectors do not comply with IEC 60320 or IEC 60083.	P
4.3.6	Direct plug-in equipment	Not intended to plug directly into a wall socket-outlet.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Torque ..... :	-	—
	Compliance with the relevant mains plug standard ..... :		N/A
4.3.7	Heating elements in earthed equipment	No heating elements provided	N/A
4.3.8	Batteries	Refer below;	P
	- Overcharging of a rechargeable battery	No rechargeable batteries in the equipment	N/A
	- Unintentional charging of a non-rechargeable battery	The test is performed protection component of the RTC battery. The reverse current protection is accomplished by series diode a nd resistor. See appended table 5.3	P
	- Reverse charging of a rechargeable battery	No rechargeable batteries in the equipment	N/A
	- Excessive discharging rate for any battery	The used RTC battery is approv ed component.	N/A
4.3.9	Oil and grease	No oil and grease provided	N/A
4.3.10	Dust, powders, liquids and gases	The equipment does not produce dusts or powders, and does not contain flammable liquids or gases.	N/A
4.3.11	Containers for liquids or gases	No containers for liquids or gases in the equipment.	N/A
4.3.12	Flammable liquids ..... :	No flammable liquids provided	N/A
	Quantity of liquid (l) ..... :	-	N/A
	Flash point (°C) ..... :	-	N/A
4.3.13	Radiation		P
4.3.13.1	General		N/A
4.3.13.2	Ionizing radiation	No ionizing radiation provided	N/A
	Measured radiation (pA/kg) ..... :		—
	Measured high-voltage (kV) ..... :		—
	Measured focus voltage (kV) ..... :		—
	CRT markings ..... :		—
4.3.13.3	Effect of ultraviolet (UV) radiation on materials	No UV radiation provided	N/A
	Part, property, retention after test, flammability classification ..... :		N/A
4.3.13.4	Human exposure to ultraviolet (UV) radiation ..... :		N/A
4.3.13.5	Lasers (including laser diodes) and LEDs		P
4.3.13.5.1	Lasers (including laser laser diodes)	No lasers	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Laser class ..... :		—
4.3.13.5.2	Light emitting diodes (LEDs)	LEDs are diffusive type	—
4.3.13.6	Other types ..... :		N/A
4.4	**Protection against hazardous moving parts**		P
4.4.1	General	Refer below;	P
4.4.2	Protection in operator access areas ..... :	No hazardous moving part in operator access area. The system fan is not for user accessible.	P
	Household and home/office document/media shredders		N/A
4.4.3	Protection in restricted access locations ..... :		N/A
4.4.4	Protection in service access areas		N/A
4.4.5	Protection against moving fan blades	The system fan is not for user accessible.	N/A
4.4.5.1	General		N/A
	Not considered to cause pain or injury. a)…….:		N/A
	Is considered to cause pain, not injury. b) …….:		N/A
	Considered to cause injury. c) …….:		N/A
4.4.5.2	Protection for users		N/A
	Use of symbol or warning ……:		N/A
4.4.5.3	Protection for service persons		N/A
	Use of symbol or warning ……:		N/A
4.5	**Thermal requirements**		P
4.5.1	General	Refer below;	P
4.5.2	Temperature tests	(see appended table 4.5)	P
	Normal load condition per Annex L ..... :	Complied with Annex L.7	—
4.5.3	Temperature limits for materials	(see appended table 4.5)	P
4.5.4	Touch temperature limits	(see appended table 4.5)	P
4.5.5	Resistance to abnormal heat ..... :	Refer to certified power supply units test reports.	P
4.6	**Openings in enclosures**		P
4.6.1	Top and side openings		P
	Dimensions (mm) ..... :	No risk through openings	—
4.6.2	Bottoms of fire enclosures	No openings	P

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Clause	Requirement + Test	Result - Remark	Verdict
	Construction of the bottom, dimensions (mm) ..... :		—
4.6.3	Doors or covers in fire enclosures	No doors or covers	N/A
4.6.4	Openings in transportable equipment	No transportable equipment	N/A
4.6.4.1	Constructional design measures		N/A
	Dimensions (mm) ..... :		—
4.6.4.2	Evaluation measures for larger openings		N/A
4.6.4.3	Use of metallized parts		N/A
4.6.5	Adhesives for constructional purposes	No barrier or screen secured with adhesive provided	N/A
	Conditioning temperature (°C), time (weeks)..... :		—
4.7	**Resistance to fire**		P
4.7.1	Reducing the risk of ignition and spread of flame	Method 1 used	P
	Method 1, selection and application of components wiring and materials	(see appended table 4.7)	P
	Method 2, application of all of simulated fault condition tests		N/A
4.7.2	Conditions for a fire enclosure	Refer below;	P
4.7.2.1	Parts requiring a fire enclosure	Used metal chassis	P
4.7.2.2	Parts not requiring a fire enclosure		N/A
4.7.3	Materials		P
4.7.3.1	General	Refer below;	P
4.7.3.2	Materials for fire enclosures	Using metal enclosures	P
4.7.3.3	Materials for components and other parts outside fire enclosures		N/A
4.7.3.4	Materials for components and other parts inside fire enclosures	Internal components except sm all parts are V-2, HF-2 or better.	P
4.7.3.5	Materials for air filter assemblies	No air filter assemblies	N/A
4.7.3.6	Materials used in high-voltage components	No high-voltage components	N/A
5	**ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS**		P
5.1	**Touch current and protective conductor current**		P
5.1.1	General		P
5.1.2	Configuration of equipment under test (EUT)	See appended test table 5.1	P
5.1.2.1	Single connection to an a.c. mains supply	Each redundant power supply m odule of equipment tested separ ately.	P

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Clause	Requirement + Test	Result - Remark	Verdict
5.1.2.2	Redundant multiple connections to an a.c. mains supply	Each redundant power supply module of equipment tested separately.	P
5.1.2.3	Simultaneous multiple connections to an a.c. mains supply		N/A
5.1.3	Test circuit	Using the test circuit in figure 5A	P
5.1.4	Application of measuring instrument	Annex D, Figure D.1	P
5.1.5	Test procedure		P
5.1.6	Test measurements	See appended table 5.1	P
	Supply voltage (V) .....:	264 V	—
	Measured touch current (mA) .....:	See appended table 5.1	—
	Max. allowed touch current (mA) .....:	See appended table 5.1	—
	Measured protective conductor current (mA) .....:		—
	Max. allowed protective conductor current (mA)...:		—
5.1.7	Equipment with touch current exceeding 3,5 mA	Touch current does not exceed 3.5 mA	N/A
5.1.7.1	General .....:		N/A
5.1.7.2	Simultaneous multiple connections to the supply		N/A
5.1.8	Touch currents to telecommunication networks and cable distribution systems and from telecommunication networks	Not connected to telecommunication networks.	N/A
5.1.8.1	Limitation of the touch current to a telecommunication network or to a cable distribution system	No TNV.	N/A
	Supply voltage (V) .....:		—
	Measured touch current (mA) .....:		—
	Max. allowed touch current (mA) .....:		—
5.1.8.2	Summation of touch currents from telecommunication networks	No TNV.	N/A
	a) EUT with earthed telecommunication ports .....:		N/A
	b) EUT whose telecommunication ports have no reference to protective earth		N/A
5.2	**Electric strength**		P
5.2.1	General		P
5.2.2	Test procedure	See appended table 5.2	P

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Clause	Requirement + Test	Result - Remark	Verdict
5.3	**Abnormal operating and fault conditions**		P
5.3.1	Protection against overload and abnormal operation	(see appended table 5.3)	P
5.3.2	Motors	The motors are parts of approve d components (H.D.D. and DC Fan).	P
5.3.3	Transformers	Refer to certified power supply units test reports.	P
5.3.4	Functional insulation.....:	Complies with c)	P
5.3.5	Electromechanical components	No electromechanical components provided	N/A
5.3.6	Audio amplifiers in ITE .....:		N/A
5.3.7	Simulation of faults	See appended table 5.3 and certified power supply units test reports	P
5.3.8	Unattended equipment	No audio amplifiers in the equipment.	N/A
5.3.9	Compliance criteria for abnormal operating and fault conditions	(see appended table 5.3)	P
5.3.9.1	During the tests	No fire, molten metal or deformation	P
5.3.9.2	After the tests	Electric strength test made.	P
6	**CONNECTION TO TELECOMMUNICATION NETWORKS**		N/A
6.1	**Protection of telecommunication network service persons, and users of other equipment connected to the network, from hazards in the equipment**		N/A
6.1.1	Protection from hazardous voltages		N/A
6.1.2	Separation of the telecommunication network from earth		N/A
6.1.2.1	Requirements	No TNV circuits.	N/A
	Supply voltage (V) ..... :		—
	Current in the test circuit (mA) ..... :		—
6.1.2.2	Exclusions ..... :		N/A
6.2	**Protection of equipment users from overvoltages on telecommunication networks**		N/A
6.2.1	Separation requirements	No TNV circuits	N/A
6.2.2	Electric strength test procedure		N/A
6.2.2.1	Impulse test		N/A
6.2.2.2	Steady-state test		N/A
6.2.2.3	Compliance criteria		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
6.3	**Protection of the telecommunication wiring system from overheating**		N/A
	Max. output current (A) ..... :	No TNV circuits	—
	Current limiting method ..... :		—
7	**CONNECTION TO CABLE DISTRIBUTION SYSTEMS**		N/A
7.1	General	Not intended to be connected to a cable distribution system	N/A
7.2	Protection of cable distribution system service persons, and users of other equipment connected to the system, from hazardous voltages in the equipment		N/A
7.3	Protection of equipment users from overvoltages on the cable distribution system		N/A
7.4	Insulation between primary circuits and cable distribution systems		N/A
7.4.1	General		N/A
7.4.2	Voltage surge test		N/A
7.4.3	Impulse test		N/A
A	**ANNEX A, TESTS FOR RESISTANCE TO HEAT AND FIRE**		N/A
A.1	**Flammability test for fire enclosures of movable equipment having a total mass exceeding 18 kg, and of stationary equipment (see 4.7.3.2)**	All materials have suitable flame class, no testing required.	N/A
A.1.1	Samples.....:		—
	Wall thickness (mm).....:		—
A.1.2	Conditioning of samples; temperature (°C) .....:		N/A
A.1.3	Mounting of samples .....:		N/A
A.1.4	Test flame (see IEC 60695-11-3)		N/A
	Flame A, B, C or D .....:		—
A.1.5	Test procedure		N/A
A.1.6	Compliance criteria		N/A
	Sample 1 burning time (s) .....:		—
	Sample 2 burning time (s) .....:		—
	Sample 3 burning time (s) .....:		—
A.2	**Flammability test for fire enclosures of movable equipment having a total mass not exceeding 18 kg, and for material and components located inside fire enclosures (see 4.7.3.2 and 4.7.3.4)**		N/A
A.2.1	Samples, material.....:		—
	Wall thickness (mm).....:		—

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Clause	Requirement + Test	Result - Remark	Verdict
A.2.2	Conditioning of samples; temperature (°C) .....:		N/A
A.2.3	Mounting of samples .....:		N/A
A.2.4	Test flame (see IEC 60695-11-4)		N/A
	Flame A, B or C .....:		—
A.2.5	Test procedure		N/A
A.2.6	Compliance criteria		N/A
	Sample 1 burning time (s) .....:		—
	Sample 2 burning time (s) .....:		—
	Sample 3 burning time (s) .....:		—
A.2.7	Alternative test acc. to IEC 60695-11-5, cl. 5 and 9		N/A
	Sample 1 burning time (s) .....:		—
	Sample 2 burning time (s) .....:		—
	Sample 3 burning time (s) .....:		—
A.3	**Hot flaming oil test (see 4.6.2)**		N/A
A.3.1	Mounting of samples		N/A
A.3.2	Test procedure		N/A
A.3.3	Compliance criterion		N/A

B	**ANNEX B, MOTOR TESTS UNDER ABNORMAL CONDITIONS (see 4.7.2.2 and 5.3.2)**		N/A
B.1	**General requirements**	Approved component of DC fan and H.D.D.	N/A
	Position .....:		—
	Manufacturer .....:		—
	Type .....:		—
	Rated values .....:		—
B.2	**Test conditions**		N/A
B.3	**Maximum temperatures**		N/A
B.4	**Running overload test**		N/A
B.5	**Locked-rotor overload test**		N/A
	Test duration (days) .....:		—
	Electric strength test: test voltage (V) .....:		—
B.6	**Running overload test for d.c. motors in secondary circuits**		N/A
B.6.1	General		N/A
B.6.2	Test procedure		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
B.6.3	Alternative test procedure		N/A
B.6.4	Electric strength test; test voltage (V) .....:		N/A
B.7	**Locked-rotor overload test for d.c. motors in secondary circuits**		N/A
B.7.1	General		N/A
B.7.2	Test procedure		N/A
B.7.3	Alternative test procedure		N/A
B.7.4	Electric strength test; test voltage (V) .....:		N/A
B.8	**Test for motors with capacitors**		N/A
B.9	**Test for three-phase motors**		N/A
B.10	**Test for series motors**		N/A
	Operating voltage (V) .....:		—
C	**ANNEX C, TRANSFORMERS (see 1.5.4 and 5.3.3)**		N/A
	Position .....:	Evaluation of the approved power supply	—
	Manufacturer .....:		—
	Type .....:		—
	Rated values .....:		—
	Method of protection..... :		—
C.1	**Overload test**		N/A
C.2	**Insulation**		N/A
	Protection from displacement of windings..... :		N/A
D	**ANNEX D, MEASURING INSTRUMENTS FOR TOUCH-CURRENT TESTS (see 5.1.4)**		P
D.1	**Measuring instrument**	Figure D.1 used.	P
D.2	**Alternative measuring instrument**		N/A
E	**ANNEX E, TEMPERATURE RISE OF A WINDING (see 1.4.13)**		N/A
F	**ANNEX F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10 and Annex G)**		P
G	**ANNEX G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES**		N/A
G.1	**Clearances**		N/A
G.1.1	General		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.1.2	Summary of the procedure for determining minimum clearances		N/A
G.2	**Determination of mains transient voltage (V)**		N/A
G.2.1	AC mains supply .....:		N/A
G.2.2	Earthed d.c. mains supplies .....:		N/A
G.2.3	Unearthed d.c. mains supplies .....:		N/A
G.2.4	Battery operation .....:		N/A
G.3	**Determination of telecommunication network transient voltage (V) ..... :**		N/A
G.4	**Determination of required withstand voltage (V)**		N/A
G.4.1	Mains transients and internal repetitive peaks .....:		N/A
G.4.2	Transients from telecommunication networks .....:		N/A
G.4.3	Combination of transients		N/A
G.4.4	Transients from cable distribution systems		N/A
G.5	**Measurement of transient voltages (V)**		N/A
	a) Transients from a mains supply		N/A
	For an a.c. mains supply		N/A
	For a d.c. mains supply		N/A
	b) Transients from a telecommunication network		N/A
G.6	**Determination of minimum clearances ..... :**		N/A
H	**ANNEX H, IONIZING RADIATION (see 4.3.13)**		N/A
J	**ANNEX J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6)**		N/A
	Metal(s) used .....:		—
K	**ANNEX K, THERMAL CONTROLS (see 1.5.3 and 5.3.8)**		N/A
K.1	Making and breaking capacity		N/A
K.2	Thermostat reliability; operating voltage (V) .....:		N/A
K.3	Thermostat endurance test; operating voltage (V) .....:		N/A
K.4	Temperature limiter endurance; operating voltage (V) .....:		N/A
K.5	Thermal cut-out reliability		N/A
K.6	Stability of operation		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
L	**ANNEX L, NORMAL LOAD CONDITIONS FOR SOME TYPES OF ELECTRICAL BUSINESS EQUIPMENT (see 1.2.2.1 and 4.5.2)**		P
L.1	Typewriters		N/A
L.2	Adding machines and cash registers		N/A
L.3	Erasers		N/A
L.4	Pencil sharpeners		N/A
L.5	Duplicators and copy machines		N/A
L.6	Motor-operated files		N/A
L.7	Other business equipment	Maximum normal load which specified by manufacturer.	P
M	**ANNEX M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)**		N/A
M.1	Introduction	No Telephone ringing signals.	N/A
M.2	Method A		N/A
M.3	Method B		N/A
M.3.1	Ringing signal		N/A
M.3.1.1	Frequency (Hz) .....:		—
M.3.1.2	Voltage (V) .....:		—
M.3.1.3	Cadence; time (s), voltage (V) .....:		—
M.3.1.4	Single fault current (mA) .....:		—
M.3.2	Tripping device and monitoring voltage .....:		N/A
M.3.2.1	Conditions for use of a tripping device or a monitoring voltage		N/A
M.3.2.2	Tripping device		N/A
M.3.2.3	Monitoring voltage (V) .....:		N/A
N	**ANNEX N, IMPULSE TEST GENERATORS (see 1.5.7.2, 1.5.7.3, 2.10.3.9, 6.2.2.1, 7.3.2, 7.4.3 and Clause G.5)**		N/A
N.1	ITU-T impulse test generators		N/A
N.2	IEC 60065 impulse test generator		N/A
P	**ANNEX P, NORMATIVE REFERENCES**		—

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Clause	Requirement + Test	Result - Remark	Verdict
Q	**ANNEX Q, Voltage dependent resistors (VDRs) (see 1.5.9.1)**		N/A
	- Preferred climatic categories .....:		N/A
	- Maximum continuous voltage .....:		N/A
	- Combination pulse current .....:		N/A
	Body of the VDR Test according to IEC60695-11-5.....:		N/A
	Body of the VDR. Flammability class of material (min V-1).....:		N/A
R	**ANNEX R, EXAMPLES OF REQUIREMENTS FOR QUALITY CONTROL PROGRAMMES**		N/A
R.1	Minimum separation distances for unpopulated coated printed boards (see 2.10.6.2)		N/A
R.2	Reduced clearances (see 2.10.3)		N/A
S	**ANNEX S, PROCEDURE FOR IMPULSE TESTING (see 6.2.2.3)**		N/A
S.1	Test equipment		N/A
S.2	Test procedure		N/A
S.3	Examples of waveforms during impulse testing		N/A
T	**ANNEX T, GUIDANCE ON PROTECTION AGAINST INGRESS OF WATER (see 1.1.2)**		N/A
			—
U	**ANNEX U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.4)**		N/A
			—
V	**ANNEX V, AC POWER DISTRIBUTION SYSTEMS (see 1.6.1)**		P
V.1	Introduction		P
V.2	TN power distribution systems		P
W	**ANNEX W, SUMMATION OF TOUCH CURRENTS**		N/A
W.1	Touch current from electronic circuits	Not connected to TNV circuit	N/A
W.1.1	Floating circuits		N/A
W.1.2	Earthed circuits		N/A
W.2	Interconnection of several equipments		N/A
W.2.1	Isolation		N/A
W.2.2	Common return, isolated from earth		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
W.2.3	Common return, connected to protective earth		N/A
X	**ANNEX X, MAXIMUM HEATING EFFECT IN TRANSFORMER TESTS (see clause C.1)**		N/A
X.1	Determination of maximum input current		N/A
X.2	Overload test procedure		N/A
Y	**ANNEX Y, ULTRAVIOLET LIGHT CONDITIONING TEST (see 4.3.13.3)**		N/A
Y.1	Test apparatus ..... :		N/A
Y.2	Mounting of test samples ..... :		N/A
Y.3	Carbon-arc light-exposure apparatus ..... :		N/A
Y.4	Xenon-arc light exposure apparatus ..... :		N/A
Z	**ANNEX Z, OVERVOLTAGE CATEGORIES (see 2.10.3.2 and Clause G.2)**		P
AA	**ANNEX AA, MANDREL TEST (see 2.10.5.8)**		N/A
BB	**ANNEX BB, CHANGES IN THE SECOND EDITION**		—
CC	**ANNEX CC, Evaluation of integrated circuit (IC) current limiters**		N/A
CC.1	General		N/A
CC.2	Test program 1……:		N/A
CC.3	Test program 2……:		N/A
CC.4	Test program 3……:		N/A
CC.5	Compliance……:		N/A
DD	**ANNEX DD, Requirements for the mounting means of rack-mounted equipment**		N/A
DD.1	General		N/A
DD.2	Mechanical strength test, variable N……:		N/A
DD.3	Mechanical strength test, 250N, including end stops……:		N/A
DD.4	Compliance……:		N/A
EE	**ANNEX EE, Household and home/office document/media shredders**		N/A
EE.1	General		N/A
EE.2	Markings and instructions		N/A
	Use of markings or symbols……:		N/A
	Information of user instructions, maintenance and/or servicing instructions……:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
EE.3	Inadvertent reactivation test.....:		N/A
EE.4	Disconnection of power to hazardous moving parts:		N/A
	Use of markings or symbols.....:		N/A
EE.5	Protection against hazardous moving parts		N/A
	Test with test finger (Figure 2A) .....:		N/A
	Test with wedge probe (Figure EE1 and EE2) .....:		N/A

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

1.5.1	TABLE: List of critical components				P
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity[1])
Building-in Power Supply (Two provided)	FSP Group Inc.	FSP550-20ERM	I/P: 100-240 Vac, 8-4 A, 50-60 Hz, O/P: +12 Vdc, 44 A, Max.; +12 Vsb, 2.1 A Max. Total power is 550 W; Class I.	IEC 60950-1: 2005+A1: 2009+A2: 2013 EN 60950-1: 2006/A11:2009 /A 1:2010/A12: 2011/A2:2013	TUV Rh
3.5 inch HDD (optional)	HGST	HUS726060AL5210	5 Vdc, 12 Vdc/ max, 1.5 A, 2.0 A	IEC 60950-1	TUV Rh
(Alternate)	Interchangeable	Interchangeable	5 Vdc, 12 Vdc/ max, 1.5 A, 2.0 A	IEC 60950-1	CB or CE
Metal enclosure	Interchangeable	Interchangeable	0.8 mm thick min.	--	--
Plastic frame (Decorative part)	Interchangeable	Interchangeable	HB or better	UL94	UL
System Fan	NIDEC TAIWAN CORP	R80W12BGAC-ef, e=07 or 57 for PWM & Tach, f=xxxxxx, Where x may be 0-9, A-Z, a-z or blank	I/P: 12 Vdc, 1.96 A AIRFLOW: 82.4 CFM min. 2.33 m^3/min	EN 60950-1	TUV SUD
System Fan (Alternate)	NIDEC AMERICA CORPORATION	D08A-12PS1403AH1(K)	I/P: 12 Vdc, 0.87 A. 2.06 m^3/min	EN 60950-1	TUV SUD
CPU Fan	SUNONWEALTH	PF60251BX-Q030-S99	I/P: 12 Vdc, 300 mA. AIRFLOW: 39.0 CFM	EN 60950-1	TUV Rh
CPU Fan (Alternate)	DYNAEON INDUSTRIAL CO LTD	DF126028BM	I/P: 12 Vdc, 0.6 A AIRFLOW: 40.5 A	EN60950-1	TUV Rh
SELV board	Interchangeable	Interchangeable	Limit 100 W, input current: 8 A max, output connector with L.P.S.	--	--

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

1.5.1	TABLE: List of critical components				P
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity[1])
Optical transceiver (maximum eight provided) (optional)	Interchangeable	Interchangeable	DC 3.3 V, Laser class I	IEC 60825-1 or IEC 60825-2 or EN 60825-1 or EN 60825-2 or IEC 60950-1 or EN 60950-1	CB or CE
PCB	Interchangeable	Interchangeable	V-1 or better, min. 105 °C	UL 796	UL
Main Board					
RTC Battery (BAT1)	Maxell, Ltd	CR2032	Max abnormal charge current 10 mA	UL 1642	UL (MH12568)
(Alternate)	Vic-Dawn Enterprise Co Ltd	CR2032	Max abnormal charge current 10 mA	UL 1642	UL (MH20550)
(Alternate)	Interchangeable	Interchangeable	Max abnormal charge current 10 mA	UL 1642	UL
Polyswith Fuse (DF2) (For HDMI port, DVI port and VGA port used.)	Polytronics Technology Corp	SPR-P260T	6 Vdc, 2.6 A	EN 60738-1	TUV-Rh
(Alternate)	Polytronics Technology Corp	SPR-P175	6 Vdc, 1.75 A	EN 60738-1	TUV-Rh
(Alternate)	Polytronics Technology Corp	SMD1812 series	6 Vdc, 1.5 A	EN 60738-1	TUV-Rh
Polyswithch Fus e (ILANF1, IPHYF1) (For LAN_USB port)	Polytronics Technology Corp	SPR-P260T	6 Vdc, 2.6 A	EN 60738-1	TUV-Rh
(Alternate)	Polytronics Technology Corp	SPR-P175	6 Vdc, 1.75 A	EN 60738-1	TUV-Rh
(Alternate)	Polytronics Technology Corp	SMD1812 series	6 Vdc, 1.5 A	EN 60738-1	TUV-Rh

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

1.5.1	TABLE: List of critical components				P
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity[1])
Polyswitch Fuse (KF1)(For PS/2 port used.)	Polytronics Technology Corp	SPR-P260T	6 Vdc, 2.6 A	EN 60738-1	TUV-Rh
(Alternate)	Polytronics Technology Corp	SPR-P175	6 Vdc, 1.75 A	EN 60738-1	TUV-Rh
(Alternate)	Polytronics Technology Corp	SMD1812 series	6 Vdc, 1.5 A	EN 60738-1	TUV-Rh
Polyswitch Fuse (For USB port used)	Polytronics Technology Corp	SPR-P260T	6 Vdc, 2.6 A	EN 60738-1	TUV-Rh
(Alternate)	Polytronics Technology Corp	SPR-P175	6 Vdc, 1.75 A	EN 60738-1	TUV-Rh
(Alternate)	Polytronics Technology Corp	SMD1812 series	6 Vdc, 1.5 A	EN 60738-1	TUV-Rh
Supplementary information: [1]) Provided evidence ensures the agreed level of compliance. See OD-CB2039.					

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

1.5.1	TABLE: Opto Electronic Devices	P
Manufacturer..... :		
Type..... :		
Separately tested..... :		
Bridging insulation..... :		
External creepage distance ..... :		
Internal creepage distance ..... :		
Distance through insulation ..... :		
Tested under the following conditions ..... :		
Input..... :		
Output..... :		
supplementary information:		
Evaluated in the certified building-in power supply unit.		

1.6.2	TABLE: Electrical data (in normal conditions)					P
U (V)	I (A)	Irated (A)	P (W)	Fuse #	Ifuse (A)	Condition/status
90	1.708	--	148.76	1)	1.708	50 Hz, Normal load
100	1.554	8.0	148.31	1)	1.554	50 Hz, Normal load
240	0.783	4.0	145.49	1)	0.783	50 Hz, Normal load
254	0.770	--	145.40	1)	0.770	50 Hz, Normal load
264	0.741	--	144.89	1)	0.741	50 Hz, Normal load
90	1.724	--	149.95	1)	1.724	60 Hz, Normal load
100	1.555	8.0	148.60	1)	1.555	60 Hz, Normal load
240	0.781	4.0	145.68	1)	0.781	60 Hz, Normal load
254	0.771	--	145.60	1)	0.771	60 Hz, Normal load
264	0.746	--	144.90	1)	0.746	60 Hz, Normal load
Supplementary information: 1) Unit was supplied by Two power fuses (F1, F2)						

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

2.1.1.5 c) 1)	TABLE: max. V, A, VA test				N/A
Voltage (rated) (V)	Current (rated) (A)	Voltage (max.) (V)	Current (max.) (A)	VA (max.) (VA)	
supplementary information: **Evaluated in the certified building-in power supply unit.**					

2.1.1.5 c) 2)	TABLE: stored energy		N/A
Capacitance C (µF)	Voltage U (V)	Energy E (J)	
supplementary information:			

2.2	TABLE: evaluation of voltage limiting components in SELV circuits			P
Component (measured between)	Max. voltage (V) (normal operation)		Voltage Limiting Components	
	V peak	V d.c.		
Fault test performed on voltage limiting components	Voltage measured (V) in SELV circuits (V peak or V d.c.)			
supplementary information: **Evaluated in the certified building-in power supply unit.**				

2.4	TABLE: Limited current circuits				P
Location	Voltage (V)	Current (mA)	Freq. (kHz)	Limit (mA)	
Supplementary information: **Evaluated in the certified building-in power supply unit.**					

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

2.5	TABLE: limited power sources	P

Circuit output tested:

Measured Uoc (V) with all load circuits disconnected:

Components	Test condition (Single fault)	Uoc (V)	I_{sc} (A)		VA	
			Meas.	Limit	Meas.	Limit
Front USB2.0 port (USB_3_4) Pin1,2 to GND	Normal	5.37	2.5	8.0	9.97	100
Front USB2.0 port (USB_3_4) Pin1,2 to GND	F11 Short	5.37	7.8	8.0	21.99	100
Front USB2.0 port (USB_3_4) Pin3,8,10 to GND	Normal	0	0	8.0	0	100
PS2 port (PS2_KB_MS1) Pin4 to GND	Normal	5.29	3.5	8.0	14.91	100
PS2 port (PS2_KB_MS1) Pin4 to GND	KF1 Short	5.35	4.08	8.0	10.2	100
PS2 port (PS2_KB_MS1) Pin1,2 to GND	Normal	5.23	0	8.0	0	100
PS2 port (PS2_KB_MS1) Pin3, Pin5-9 to GND	Normal	0	0	8.0	0	100
DVI(VGA_DVI1A) PinD14 to GND	Normal	5.29	2.5	8.0	10.7	100
DVI(VGA_DVI1A) PinD14 to GND	DF2 short	5.34	5.9	8.0	19.47	100
DVI(VGA_DVI1A) PinD6,D7 to GND	Normal	5.23	0	8.0	0	100
DVI(VGA_DVI1A) PinD1-D5, D8-D13, D15-D24 to GND	Normal	0	0	8.0	0	100
VGA(VGA_DVI1B) PinV9 to GND	Normal	5.23	0	8.0	0	100
VGA(VGA_DVI1B) Pin1-8, Pin10-15 to GND	Normal	0	0	8.0	0	100
HDMI port(HDMI1) Pin18 to GND	Normal	5.29	2.5	8.0	8.62	100

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Clause	Requirement + Test	Result - Remark	Verdict

2.5	TABLE: limited power sources	P

Circuit output tested:

Measured Uoc (V) with all load circuits disconnected:

Components	Test condition (Single fault)	Uoc (V)	I_{sc} (A)		VA	
			Meas.	Limit	Meas.	Limit
HDMI port(HDMI1) Pin18 to GND	DF2 Sc	5.36	6.0	8.0	19.8	100
HDMI port(HDMI1) Pin15,16 to GND	Normal	5.23	0	8.0	0	100
HDMI port(HDMI1) Pin1-14,17 to GND	Normal	0	0	8.0	0	100
LAN port (LAN3_1_2) Pin19-28, to GND	Normal	0	0	8.0	0	100
USB3.0 port (LAN1_USB3_1_2) Pin1,10 to GND	Normal	5.29	5.0	8.0	19.45	100
USB3.0 port (LAN1_USB3_1_2) Pin1,10 to GND	IANF1 Short	5.35	6.8	8.0	23.12	100
USB3.0 port (LAN1_USB3_1_2) Pin2-9, Pin11-18 to GND	Normal	0	0	8.0	0	100
USB3.0 port (LAN2_USB3_3_4) Pin19-28 to GND	Normal	0	0	8.0	0	100
USB3.0 port (LAN2_USB3_3_4) Pin1,10 to GND	Normal	5.29	5.0	8.0	19.45	100
USB3.0 port (LAN2_USB3_3_4) Pin1,10 to GND	IPHYF1 Sc	5.35	6.8	8.0	23.12	100
USB3.0 port (LAN2_USB3_3_4) Pin2-9, Pin11-18 to GND	Normal	0	0	8.0	0	100
LIN port(AUDIO1) Pin32-35 to GND	Normal	0	0	8.0	0	100
Front port(AUDIO1) Pin22-25 to GND	Normal	0	0	8.0	0	100
MIC port(AUDIO1) Pin1-5 to GND	Normal	0	0	8.0	0	100

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

2.5	TABLE: limited power sources	P

Circuit output tested:

Measured Uoc (V) with all load circuits disconnected:

Components	Test condition (Single fault)	Uoc (V)	I_{sc} (A)		VA	
			Meas.	Limit	Meas.	Limit
CEN port(AuDIO1) Pin41-45 to GND	DF2 Short	0	0	8.0	0	100
SURB port(AUDIO1) Pin52-55 to GND	Normal	0	0	8.0	0	100
SPDIF port(AUDIO1) PinB to GND	Normal	5.23	0	8.0	0	100
SPDIF port(AUDIO1) PinA,C to GND	Normal	0	0	8.0	0	100

Supplementary information:

2.10.2	Table: working voltage measurement	N/A

Location	RMS voltage (V)	Peak voltage (V)	Comments

supplementary information:

2.10.3 and 2.10.4	TABLE: Clearance and creepage distance measurements	P

Clearance (cl) and creepage distance (cr) at/of/between:	U peak (V)	U r.m.s. (V)	Required cl (mm)	cl (mm)	Required cr (mm)	cr (mm)
Functional:						
Basic/supplementary:						
Reinforced:						

Supplementary information:

Evaluated in the certified building-in power supply.

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Clause	Requirement + Test	Result - Remark	Verdict

2.10.5	TABLE: Distance through insulation measurements					N/A
Distance through insulation (DTI) at/of:		U peak (V)	U rms (V)	Test voltage (V)	Required DTI (mm)	DTI (mm)
Supplementary information: **Evaluated in the certified building-in power supply.**						

4.3.8	TABLE: Batteries									P
The tests of 4.3.8 are applicable only when appropriate battery data is not avaliable						Yes				N/A
Is it possible to install the battery in a reverse polarity position?						The RTC battery's polarity can't be reversed according to the design.				P
	Non-rechargeable batteries			Rechargeable batteries						
	Discharging		Un-intentional charging	Charging (mA)		Discharging (mA)		Reversed charging		
	Meas. current	Manuf. Specs.		Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	
Max. current during normal condition	--	--	1)	--	--	--	--	--	--	
Max. current during fault condition	--	--	1)	--	--	--	--	--	--	
Test results:										Verdict
- Chemical leaks						There was no chemical leak.				P
- Explosion of the battery						The battery did not explode re sulting in injury to a user				P
- Emission of flame or expulsion of molten metal						There was no emission of flame or expulsion of molten m etal outside the battery-operated product.				P
- Electric strength tests of equipment after completion of tests						Only SELV circuit.				N/A
Supplementary information: 1) Considred for RTC battery, also see appended table 5.3										

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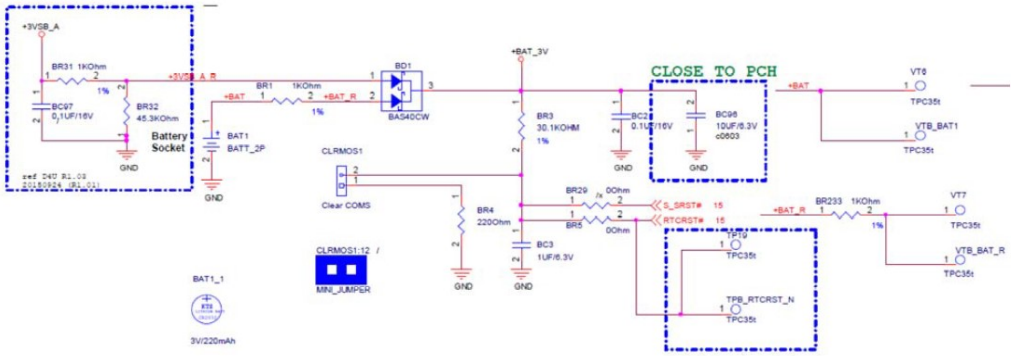
Clause	Requirement + Test	Result - Remark	Verdict

4.3.8	TABLE: Batteries	P

Battery category.....: Lithium for RTC battery (Coin)
Manufacturer.....: See appended table 1.5.1
Type / model .....: See appended table 1.5.1
Voltage.....: See appended table 1.5.1
Capacity .....: See appended table 1.5.1
Tested and Certified by (incl. Ref. No.).....: See below.
Circuit protection diagram:



MARKINGS AND INSTRUCTIONS (1.7.13)	
Location of replaceable battery	See clause 1.7.13.
Language(s) ……:	English
Close to the battery ……:	See clause 1.7.13.
In the servicing instructions ……:	See clause 1.7.13.
In the operating instructions ……:	See clause 1.7.13.

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

4.5	**TABLE: Thermal requirements**			P
	Supply voltage (V)	90 V 50 Hz	90 V 50 Hz (T_{ma} : 40)	—
	Ambient T_{min} (°C)	26.3	-	—
	Ambient T_{max} (°C)	27.2	-	—
Maximum measured temperature T of part/at::		T (°C)		Allowed T_{max} (°C)
1. Ambient		26.3	40.0	--
2. Line filter coil near BD1		39.3	53.0	105
3. L100 coil		40.3	54.0	105
4. T101 coil		41.6	55.3	110*)
5. Coil near CN100		36.4	50.1	105
6. PCB near C138		35.4	49.1	105
7. C138 body		36.3	50.0	105
8. Top Enclosure near T101		35.2	48.9	--
9. RTC battery body		37.9	51.6	100
10. PCB near LTVC 05		41.5	55.2	105
11. PCB near SX2		39.1	52.8	105
12. PCB near U1		36.9	50.6	105
13. PCB near L5		34.7	48.4	105
14. PCB near U9		37.8	51.5	105
15. HDD body		34.0	47.7	100
16. Enclosure near Rear port		36.1	49.8	70
17. Enclosure near inlet		35.5	49.2	70
18. Side enclosure		33.1	46.8	70
19. Top enclosure		34.5	48.2	70

Supplementary information: 1-8; power supply unit, 9-14; Main board
T_{ma} : 40 °C (T - T_{amb} + T_{ma})
*) Temperature limits include less 10 °C for thermocouple measurement method. If no limit is stated, tempe rature is for reference only.

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

Supplementary information: Continuous transmission and operation

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

4.5	**TABLE: Thermal requirements**			P
	Supply voltage (V)	264 V 50 Hz	264 V 50 Hz (T_{ma} : 40)	—
	Ambient T_{min} (°C)	26.0	-	—
	Ambient T_{max} (°C)	26.2	-	—
Maximum measured temperature T of part/at::		T (°C)		Allowed T_{max} (°C)
1. Ambient		26.2	40.0	--
2. Line filter coil near BD1		43.3	57.1	105
3. L100 coil		45.2	59.0	105
4. T101 coil		50.8	64.6	110*)
5. Coil near CN100		44.0	57.8	105
6. PCB near C138		42.7	56.5	105
7. C138 body		41.2	55.0	105
8. Top Enclosure near T101		40.3	54.1	--
9. RTC battery body		37.6	51.4	100
10. PCB near LTVC 05		41.0	54.8	105
11. PCB near SX2		39.4	53.2	105
12. PCB near U1		37.5	51.3	105
13. PCB near L5		35.1	48.9	105
14. PCB near U9		38.3	52.1	105
15. HDD body		34.5	48.3	100
16. Enclosure near Rear port		36.2	50.0	70
17. Enclosure near inlet		36.2	50.0	70
18. Side enclosure		33.1	46.9	70
19. Top enclosure		34.9	48.7	70
Supplementary information: 1-8; power supply unit, 9-14; Main board T_{ma} : 40 °C (T - T_{amb} + T_{ma}) *) Temperature limits include less 10 °C for thermocouple measurement method. If no limit is stated, tempe rature is for reference only.				

Temperature T of winding:	t_1 (°C)	R_1 (Ω)	t_2 (°C)	R_2 (Ω)	T (°C)	Allowed T_{max} (°C)	Insulation class
Supplementary information: Continuous transmission and operation							

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

4.5	**TABLE: Thermal requirements**			P
	Supply voltage (V)	90 V 60 Hz	90 V 60 Hz (T_{ma} : 40)	—
	Ambient T_{min} (°C)	26.4	-	—
	Ambient T_{max} (°C)	26.4	-	—
Maximum measured temperature T of part/at::		T (°C)		Allowed T_{max} (°C)
1. Ambient		26.4	40.0	--
2. Line filter coil near BD1		39.8	53.4	105
3. L100 coil		40.7	54.3	105
4. T101 coil		41.9	55.5	110*)
5. Coil near CN100		36.8	50.4	105
6. PCB near C138		35.7	49.3	105
7. C138 body		36.8	50.4	105
8. Top Enclosure near T101		35.5	49.1	--
9. RTC battery body		38.7	52.3	100
10. PCB near LTVC 05		42.5	56.1	105
11. PCB near SX2		39.5	53.1	105
12. PCB near U1		37.6	51.2	105
13. PCB near L5		35.3	48.9	105
14. PCB near U9		38.3	51.9	105
15. HDD body		34.4	48.0	100
16. Enclosure near Rear port		36.9	50.5	70
17. Enclosure near inlet		35.9	49.5	70
18. Side enclosure		33.0	46.6	70
19. Top enclosure		35.0	48.6	70

Supplementary information: 1-8; power supply unit, 9-14; Main board
T_{ma} : 40 °C (T - T_{amb} + T_{ma})
*) Temperature limits include less 10 °C for thermocouple measurement method. If no limit is stated, tempe rature is for reference only.

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

Supplementary information: Continuous transmission and operation

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

4.5	**TABLE: Thermal requirements**			P
	Supply voltage (V)	264 V 60 Hz	264 V 60 Hz (T_{ma} : 40)	—
	Ambient T_{min} (°C)	25.8	-	—
	Ambient T_{max} (°C)	26.2	-	—
Maximum measured temperature T of part/at::		T (°C)		Allowed T_{max} (°C)
1. Ambient		26.2	40.0	--
2. Line filter coil near BD1		43.7	57.5	105
3. L100 coil		45.3	59.1	105
4. T101 coil		50.6	64.4	110*)
5. Coil near CN100		43.6	57.4	105
6. PCB near C138		42.4	56.2	105
7. C138 body		41.6	55.4	105
8. Top Enclosure near T101		40.4	54.2	--
9. RTC battery body		39.0	52.8	100
10. PCB near LTVC 05		42.9	56.7	105
11. PCB near SX2		40.1	53.9	105
12. PCB near U1		38.2	52.0	105
13. PCB near L5		35.7	49.5	105
14. PCB near U9		39.2	53.0	105
15. HDD body		34.6	48.4	100
16. Enclosure near Rear port		37.2	51.0	70
17. Enclosure near inlet		36.4	50.2	70
18. Side enclosure		33.4	47.2	70
19. Top enclosure		35.7	49.5	70

Supplementary information: 1-8; power supply unit, 9-14; Main board
T_{ma} : 40 °C (T - T_{amb} + T_{ma})
*) Temperature limits include less 10 °C for thermocouple measurement method. If no limit is stated, tempe rature is for reference only.

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

Supplementary information: Continuous transmission and operation

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

4.5.5	TABLE: Ball pressure test of thermoplastic parts		P
	Allowed impression diameter (mm) ..... :	≤ 2 mm	—

Part	Test temperature (°C)	Impression diameter (mm)

Supplementary information:
Evaluated in the certified building-in power supply.

4.7	TABLE: Resistance to fire				P
Part	Manufacturer of material	Type of material	Thickness (mm)	Flammability class	Evidence

Supplementary information: see appended table 1.5.1

5.1	TABLE: Touch current measurement			P
Measured between:		Measured (mA)	Limit (mA)	Comments/conditions
I/O Terminal (Unearthed)		0.003	0.25	264 V, 60 Hz
I/O Terminal (Unearthed)		0.003	0.25	264 V, 60 Hz
Metal enclosure (Earthed)		1.097	3.5	264 V, 60 Hz
Metal enclosure (Earthed)		1.100	3.5	264 V, 60 Hz
Plastic enclosure (Unearthed)		0.004	0.25	264 V, 60 Hz
Plastic enclosure (Unearthed)		0.004	0.25	264 V, 60 Hz
Supplementary information:				

5.2	TABLE: Electric strength tests, impulse tests and voltage surge tests			P
Test voltage applied between:		Voltage shape (AC, DC, impulse, surge)	Test voltage (V)	Breakdown Yes / No
Primary to Secondary		AC	3000	No
Primary to Metal enclosure		AC	1500	No
Supplementary information: After heating and humidity				

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

5.3	**TABLE: Fault condition tests**						P
	Ambient temperature (°C)			15 °C - 35 °C			—
	Power source for EUT: Manufacturer, model/type, output rating			N/A			—
Component No.	Fault	Supply voltage (V)	Test time	Fuse #	Fuse current (A)	Observation	
1. Unit	Block openning	90	1 h 19 min	1)	1.73	T101: 32.3 °C, Am: 26.3 °C No fire, No damage, No hazard	
2. Unit	Block openning	264	3 h 51 min	1)	0.75	T101: 50.8 °C, Am: 25.3 °C No fire, No damage, No hazard	
3. Power supply unit fan	Lock	90	1 h 23 min	1)	1.74	T101: 34.5 °C, Am: 25.7 °C No fire, No damage, No hazard	
4. Power supply unit fan	Lock	264	1h 25 min	1)	0.76	T101: 36.4 °C, Am: 26.4 °C No fire, No damage, No hazard	
5. Main fan	Lock	90	2 h 21 min	1)	1.73	T101: 43.5 °C, Am: 26.6 °C No fire, No damage, No hazard	
6. Main fan	Lock	264	1 h 34 min	1)	0.75	T101: 48.7 °C, Am: 25.9 °C No fire, No damage, No hazard	
7. BR1	Short	264	10 min	--	--	Reverse charging current: 0 mA, No fire, No damage, No hazard	
8. BD1 Pin1 to Pin2	Short	264	10 min	--	--	Reverse charging current: 2.90 mA, No fire, No damage, No hazard	
9. BD1 Pin2 to Pin3	Short	264	10 min	--	--	Reverse charging current: 2.79 mA, No fire, No damage, No hazard	
Supplementary information: 1) Unit was supplied by Two power fuses (F1, F2) 1-6: Tested by frequency 60 Hz, 7-9: Tested with main board for RTC battery (Normal charging current: 1.0 mA) S-c=short circuit, O-c=open circuit, O-l=overload, Am=Ambient							

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

C.2	TABLE: Transformers						P
Loc.	Tested insulation	Working voltage peak / V (2.10.2)	Working voltage rms / V (2.10.2)	Required electric strength (5.2)	Required clearance / mm (2.10.3)	Required creepage distance / mm (2.10.4)	Required distance thr. insul. (2.10.5)
Loc.	Tested insulation		Test voltage/ V	Measured clearance / mm	Measured creepage dist./ mm	Measured distance thr. insul. / mm; number of layers	
supplementary information:							
Evaluated in the certified building-in power supply.							

IEC/EN 60950-1 ATTACHMENT 1			
Clause	Requirement + Test	Result - Remark	Verdict

ATTCHMENT TO TEST REPORT IEC 60950-1
EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES

Information technology equipment – Safety –

PART 1: GENERAL REQUIREMENTS

Differences according to .....:	EN 60950-1:2006/A11:2009/A1:2010/A12:2011/A2:2013
Attachment Form No. .....:	EU_GD_IEC60950_1F
Attachment Originator .....:	SGS Fimko Ltd
Master Attachment .....:	Date 2014-02

EN 60950-1:2006/A11:2009/A1:2010/A12:2011/A2:2013 – CENELEC COMMON MODIFICATIONS

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	Clauses, subclauses, notes, tables and figures which are additional to those in IEC60950-1 and it´s amendmets are prefixed “Z”		—
Contents (A2:2013)	Add the following annexes: Annex ZA (normative) Normative references to international publications with their corresponding European publications Annex ZB (normative) Special national conditions Annex ZD (informative) IEC and CENELEC code designations for flexible cords		—
General	Delete all the “country” notes in the reference document (IEC 60950-1:2005) according to the following list: 1.4.8 Note 2 — 1.5.1 Note 2 & 3 — 1.5.7.1 Note 1.5.8 Note 2 — 1.5.9.4 Note — 1.7.2.1 Note 4, 5 & 6 2.2.3 Note — 2.2.4 Note — 2.3.2 Note 2.3.2.1 Note 2 — 2.3.4 Note 2 — 2.6.3.3 Note 2 & 3 2.7.1 Note — 2.10.3.2 Note 2 — 2.10.5.13 Note 3 3.2.1.1 Note — 3.2.4 Note 3. — 2.5.1 Note 2 4.3.6 Note 1 & 2 — 4.7 Note 4 — 4.7.2.2 Note 4.7.3.1Note 2 — 5.1.7.1 Note 3 & 4 — 5.3.7 Note 1 6 Note 2 & 5 — 6.1.2.1 Note 2 — 6.1.2.2 Note 6.2.2 Note — 6.2.2.1 Note 2 — 6.2.2.2 Note 7.1 Note 3 — 7.2 Note — 7.3 Note 1 & 2 G.2.1 Note 2 — Annex H Note 2		—
General (A1:2010)	Delete all the “country” notes in the reference document (IEC 60950-1:2005/A1:2010) according to the following list: 1.5.7.1 Note — 6.1.2.1 Note 2 6.2.2.1 Note 2 — EE.3 Note		—

IEC/EN 60950-1 ATTACHMENT 1			
Clause	Requirement + Test	Result - Remark	Verdict

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
General (A2:2013)	Delete all the “country” notes in the reference document (IEC 60950-1:2005/A2:2013) according to the following list: 1.5.7.1 Note * 6.1.2.1 Note 2 6.2.2.1 Note 2 EE.3 Note * Note of secretary: Text of Common Modification remains unchanged.		—
1.1.1 (A1:2010)	**Replace** the text of NOTE 3 by the following. NOTE 3 The requirements of EN 60065 may also be used to meet safety requirements for multimedia equipment. See IEC Guide 112, Guide on the safety of multimedia equipment. For television sets EN 60065 applies.		—
1.3.Z1	Add the following subclause: 1.3.Z1 Exposure to excessive sound pressure The apparatus shall be so designed and constructed as to present no danger when used for its intended purpose, either in normal operating conditions or under fault conditions, particularly providing protection against exposure to excessive sound pressures from headphones or earphones. NOTE Z1 A new method of measurement is described in EN 50332-1, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 1: General method for “one package equipment”, and in EN 50332-2, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 2: Guidelines to associate sets with headphones coming from different manufacturers.	This equipment is not portable audio equipment.	N/A
(A12:2011)	In EN 60950-1:2006/A12:2011 Delete the addition of 1.3.Z1 / EN 60950-1:2006 Delete the definition 1.2.3.Z1 / EN 60950-1:2006 /A1:2010	Deleted	N/A
1.5.1 (Added info*)	Add the following NOTE: NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2002/95/EC. New Directive 2011/65/11 *	Considered	P
1.7.2.1 (A1:2010)	In addition, for a PORTABLE SOUND SYSTEM, the instructions shall include a warning that excessive sound pressure from earphones and headphones can cause hearing loss.	This equipment is not portable audio equipment.	N/A
1.7.2.1 A12.2011)	In EN 60950-1:2006/A12:2011 Delete NOTE Z1 and the addition for Portable Sound System. Add the following clause and annex to the existing standard and amendments.	This equipment is not portable audio equipment.	N/A

IEC/EN 60950-1 ATTACHMENT 1			
Clause	Requirement + Test	Result - Remark	Verdict

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	Zx Protection against excessive sound pressure from personal music players		N/A
	Zx.1 General This sub-clause specifies requirements for protection against excessive sound pressure from personal music players that are closely coupled to the ear. It also specifies requirements for earphones and headphones intended for use with personal music players. A personal music player is a portable equipment for personal use, that: is designed to allow the user to listen to recorded or broadcast sound or video; and primarily uses headphones or earphones that can be worn in or on or around the ears; and allows the user to walk around while in use. NOTE 1 Examples are hand-held or body-worn portable CD players, MP3 audio players, mobile phones with MP3 type features, PDA's or similar equipment. A personal music player and earphones or headphones intended to be used with personal music players shall comply with the requirements of this sub-clause. The requirements in this sub-clause are valid for music or video mode only. The requirements do not apply: while the personal music player is connected to an external amplifier; or while the headphones or earphones are not used. NOTE 2 An external amplifier is an amplifier which is not part of the personal music player or the listening device, but which is intended to play the music as a standalone music player. The requirements do not apply to: hearing aid equipment and professional equipment; 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.	This equipment is not portable audio equipment.	N/A

IEC/EN 60950-1 ATTACHMENT 1			
Clause	Requirement + Test	Result - Remark	Verdict
	– analogue personal music players (personal music players without any kind of digital processing of the sound signal) that are brought to the market before the end of 2015. 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. For equipment which is clearly designed or intended for use by young children, the limits of EN 71-1 apply.	This equipment is not portable audio equipment.	N/A
	Zx.2 Equipment requirements No safety provision is required for equipment that complies with the following: – equipment provided as a package (personal music player with its listening device), where the acoustic output $L_{Aeq,T}$ is ≤ 85 dBA measured while playing the fixed "programme simulation noise" as described in EN 50332-1; and – a personal music player provided with an analogue electrical output socket for a listening device, where the electrical output is ≤ 27 mV measured as described in EN 50332-2, while playing the fixed "programme simulation noise" as described in EN 50332-1. NOTE 1 Wherever the term acoustic output is used in this clause, the 30 s A-weighted equivalent sound pressure level $L_{Aeq,T}$ is meant. See also Zx.5 and Annex Zx. All other equipment shall: a) protect the user from unintentional acoustic outputs exceeding those mentioned above; and b) have a standard acoustic output level not exceeding those mentioned above, and automatically return to an output level not exceeding those mentioned above when the power is switched off; and	This equipment is not portable audio equipment.	N/A

IEC/EN 60950-1 ATTACHMENT 1			
Clause	Requirement + Test	Result - Remark	Verdict
	c) provide a means to actively inform the user of the increased sound pressure when the equipment is operated with an acoustic output exceeding those mentioned above. Any means used shall be acknowledged by the user before activating a mode of operation which allows for an acoustic output exceeding those mentioned above. The acknowledgement does not need to be repeated more than once every 20 h of cumulative listening time; and NOTE 2 Examples of means include visual or audible signals. Action from the user is always required. NOTE 3 The 20 h listening time is the accumulative listening time, independent how often and how long the personal music player has been switched off. d) have a warning as specified in Zx.3; and e) not exceed the following: 1) equipment provided as a package (player with Its listening device), the acoustic output shall be ≤ 100 dBA measured while playing the fixed “programme simulation noise” described in EN 50332-1; and 2) a personal music player provided with an analogue electrical output socket for a listening device, the electrical output shall be ≤ 150 mV measured as described in EN 50332-2, while playing the fixed “programme simulation noise” described in EN 50332-1. 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, the warning does not need to be given as long as the average sound pressure of the song is below the basic limit of 85 dBA. In this case T becomes the duration of the song. NOTE 4 Classical music 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 song 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 is below the basic limit of 85 dBA. For example, if the player is set with the programme simulation noise to 85 dBA, but the average music level of the song is only 65 dBA, 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 dBA.	This equipment is not portable audio equipment.	N/A

IEC/EN 60950-1 ATTACHMENT 1			
Clause	Requirement + Test	Result - Remark	Verdict
	Zx.3 Warning The warning shall be placed on the equipment, or on the packaging, or in the instruction manual and shall consist of the following: the symbol of Figure 1 with a minimum height of 5 mm; and the following wording, or similar: "To prevent possible hearing damage, do not listen at high volume levels for long periods."  **Figure 1 – Warning label (IEC 60417-6044)** Alternatively, the entire warning may be given through the equipment display during use, when the user is asked to acknowledge activation of the higher level.	This equipment is not portable audio equipment.	N/A
	Zx.4 Requirements for listening devices (headphones and earphones)		N/A
	Zx.4.1 Wired listening devices with analogue input With 94 dBA sound pressure output $L_{Aeq,T}$, the input voltage of the fixed "programme simulation noise" described in EN 50332-2 shall be ≥ 75 mV. This requirement is applicable in any mode where the headphones can operate (active or passive), including any available setting (for example built-in volume level control). NOTE The values of 94 dBA – 75 mV correspond with 85dBA – 27 mV and 100 dBA – 150 mV.	This equipment is not portable audio equipment.	N/A
	Zx.4.2 Wired listening devices with digital input With any playing device playing the fixed "programme simulation noise" described in EN 50332-1 (and respecting the digital interface standards, where a digital interface standard exists that specifies the equivalent acoustic level), the acoustic output $L_{Aeq,T}$ of the listening device shall be ≤ 100 dBA. This requirement is applicable in any mode where the headphones can operate, including any available setting (for example built-in volume level control, additional sound feature like equalization, etc.). NOTE An example of a wired listening device with digital input is a USB headphone.	This equipment is not portable audio equipment.	N/A

IEC/EN 60950-1 ATTACHMENT 1			
Clause	Requirement + Test	Result - Remark	Verdict
	Zx.4.3 Wireless listening devices In wireless mode: with any playing and transmitting device playing the fixed programme simulation noise described in EN 50332-1; and respecting the wireless transmission standards, where an air interface standard exists that specifies the equivalent acoustic level; and with volume and sound settings in the listening device (for example built-in volume level control, additional sound feature like equalization, etc.) set to the combination of positions that maximize the measured acoustic output for the abovementioned programme simulation noise, the acoustic output $L_{Aeq,T}$ of the listening device shall be ≤ 100 dBA. NOTE An example of a wireless listening device is a Bluetooth headphone.	This equipment is not portable audio equipment.	N/A
	Zx.5 Measurement methods Measurements shall be made in accordance with EN 50332-1 or EN 50332-2 as applicable. Unless stated otherwise, the time interval T shall be 30 s. NOTE Test method for wireless equipment provided without listening device should be defined.	This equipment is not portable audio equipment.	N/A
2.7.1	Replace the subclause as follows: Basic requirements To protect against excessive current, short-circuits and earth faults in PRIMARY CIRCUITS, 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 5.3 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;	The equipment is provided with the fuse and complied with a). For the appliance inlet and the c ord set, protection is dependent on the building installation, see main test report.	P

IEC/EN 60950-1 ATTACHMENT 1			
Clause	Requirement + Test	Result - Remark	Verdict
	c) it is permitted for PLUGGABLE EQUIPMENT TYPE B or PERMANENTLY CONNECTED EQUIPMENT, to rely on dedicated overcurrent and short-circuit protection in the building installation, provided that the means of protection, e.g. fuses or circuit breakers, is fully specified in the installation instructions. If reliance is placed on protection in the building installation, the installation instructions shall so state, except that for PLUGGABLE EQUIPMENT TYPE A the building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet.		P
2.7.2	This subclause has been declared 'void'.	Considered	-
3.2.3	Delete the NOTE in Table 3A, and delete also in this table the conduit sizes in parentheses.		N/A
3.2.5.1	Replace "60245 IEC 53" by "H05 RR-F"; "60227 IEC 52" by "H03 VV-F or H03 VVH2-F"; "60227 IEC 53" by "H05 VV-F or H05 VVH2-F2". In Table 3B, replace the first four lines by the following: Up to and including 6 | 0,75 a) | Over 6 up to and including 10| (0,75) b) 1,0 | Over 10 up to and including 16| (1,0) c) 1,5 | In the conditions applicable to Table 3B delete the words "in some countries" in condition a). In NOTE 1, applicable to Table 3B, delete the second sentence.	Power cord is not provided in th e equipment. Refer to Summary of Testing in main test report.	N/A
3.2.5.1 (A2:2013)	NOTE Z1 The harmonised code designations corresponding to the IEC cord types are given in Annex ZD	Power cord is not provided in the equipment. Refer to Summary of Testing in main test report.	N/A
3.3.4	In Table 3D, delete the fourth line: conductor sizes for 10 to 13 A, and replace with the following: Over 10 up to and including 16 | 1,5 to 2,5 | 1,5 to 4 | Delete the fifth line: conductor sizes for 13 to 16 A	Appliance inlet provided	N/A
4.3.13.6 (A1:2010)	Replace the existing NOTE by the following: NOTE Z1 Attention is drawn to: 1999/519/EC: Council Recommendation on the limitation of exposure of the general public to electromagnetic fields 0 Hz to 300 GHz, and 2006/25/EC: Directive on the minimum health and safety requirements regarding the exposure of workers to risks arising from physical agents (artifical optical radiation).	The equipment does not generate other types of radiation.	N/A

IEC/EN 60950-1 ATTACHMENT 1			
Clause	Requirement + Test	Result - Remark	Verdict
	Standards taking into account mentioned Recommendation and Directive which demonstrate compliance with the applicable EU Directive are indicated in the OJEC.		N/A
Annex H	Replace the last paragraph of this annex by: At any point 10 cm from the surface of the OPERATOR ACCESS AREA, the dose rate shall not exceed 1 µSv/h (0,1 mR/h) (see NOTE). Account is taken of the background level. Replace the notes as follows: NOTE These values appear in Directive 96/29/Euratom. Delete NOTE 2.	The unit does not emit X-ray radiation.	N/A
Bibliography	Additional EN standards.		—

ZA	NORMATIVE REFERENCES TO INTERNATIONAL PUBLICATIONS WITH THEIR CORRESPONDING EUROPEAN PUBLICATIONS	—

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
1.2.4.1	In **Denmark**, certain types of Class I appliances (see 3.2.1.1) may be provided with a plug not establishing earthing conditions when inserted into Danish socket-outlets.	Power cord is not provided in the equipment. Refer to Summary of Testing in main test report.	N/A
1.2.13.14 (A11:2009)	In **Norway** and **Sweden**, for requirements see 1.7.2.1 and 7.3 of this annex.	No connection to cable distribution systems.	N/A
1.5.7.1 (A11:2009)	In **Finland**, **Norway** and **Sweden**, resistors bridging BASIC INSULATION in CLASS I PLUGGABLE EQUIPMENT TYPE A must comply with the requirements in 1.5.7.1. In addition when a single resistor is used, the resistor must withstand the resistor test in 1.5.7.2.	No resistors bridging basic insulation in the equipment.	N/A
1.5.8	In **Norway**, due to the IT power system used (see annex V, Figure V.7), capacitors are required to be rated for the applicable line-to-line voltage (230 V).		N/A
1.5.9.4	In **Finland**, **Norway** and **Sweden**, the third dashed sentence is applicable only to equipment as defined in 6.1.2.2 of this annex.	Not relevant	N/A

IEC/EN 60950-1 ATTACHMENT 1			
Clause	Requirement + Test	Result - Remark	Verdict

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.2.1	In **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 Finland: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan" In Norway: “Apparatet må tilkoples jordet stikkontakt” In Sweden: “Apparaten skall anslutas till jordat uttag”	See comments in Summary of testing.	N/A
1.7.2.1 (A11:2009)	In **Norway** and **Sweden**, the screen of the cable 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 need 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 e.g. a retailer. 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: “Equipment connected to the protective earthing of the building installation through the mains connection or through other equipment with a connection to protective earthing – and to a cable distribution system using coaxial cable, may in some circumstances create a fire hazard. Connection to a cable distribution system has therefore to be provided through a device providing electrical isolation below a certain frequency range (galvanic isolator, see EN 60728-11).”		

IEC/EN 60950-1 ATTACHMENT 1			
Clause	Requirement + Test	Result - Remark	Verdict

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	NOTE In Norway, due to regulation for installations of cable distribution systems, and in Sweden, a galvanic isolator shall provide electrical insulation below 5 MHz. The insulation shall withstand a dielectric strength of 1,5 kV r.m.s., 50 Hz or 60 Hz, for 1 min. Translation to Norwegian (the Swedish text will also be accepted in Norway): “Utstyr som er koplet til beskyttelsesjord via nettplugg og/eller via annet jordtilkoplet utstyr – og er tilkoplet et kabel-TV nett, kan forårsake brannfare. For å unngå dette skal det ved tilkopling av utstyret til kabel-TV nettet installeres en galvanisk isolator mellom utstyret og kabel- TV nettet.” Translation to Swedish: ”Utrustning 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 utrustningen till kabel-TV nät galvanisk isolator finnas mellan utrustningen och kabel-TV nätet.”	Not for connection to cable distribution systems.	N/A
1.7.2.1 (A2:2013)	In **Denmark**, 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 **Denmark** shall be as follows: In **Denmark**: “Apparatets stikprop skal tilsluttes en stikkontakt med jord, som giver forbindelse til stikproppens jord.”		N/A
1.7.5 1.7.5 (A11:2009)	In **Denmark**, socket-outlets for providing power to other equipment shall be in accordance with the Heavy Current Regulations, Section 107-2-D1, Standard Sheet DK 1-3a, DK 1-5a or DK 1-7a, when used on Class I equipment. For STATIONARY EQUIPMENT the socket-outlet shall be in accordance with Standard Sheet DK 1-1b or DK 1-5a. For **CLASS II EQUIPMENT** the socket outlet shall be in accordance with Standard Sheet DKA 1-4a.	There are no socket outlets p roviding power to other ap pliances.	N/A

IEC/EN 60950-1 ATTACHMENT 1			
Clause	Requirement + Test	Result - Remark	Verdict

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.5 (A2:2013)	In **Denmark**, socket-outlets for providing power to other equipment shall be in accordance with the DS 60884-2-D1:2011. For class I equipment the following Standard Sheets are applicable: DK 1-3a, DK 1-1c, DK 1-1d, DK 1-5a or DK 1-7a, with the exception for STATIONARY EQUIPMENT where the socket-outlets shall be in accordance with Standard Sheet DK 1-1b, DK 1-1c, DK 1-1d or DK 1-5a. Socket outlets intended for providing power to Class II apparatus with a rated current of 2,5 A shall be in accordance with DS 60884-2-D1 standard sheet DKA 1-4a. Other current rating socket outlets shall be in compliance with by DS 60884-2-D1 Standard Sheet DKA 1-3a or DKA 1-3b. Justification the Heavy Current Regulations, 6c	There are no socket outlets providing power to other appliances.	N/A
2.2.4	In **Norway**, for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.	No TNV circuits	N/A
2.3.2	In **Finland**, **Norway** and **Sweden** there are additional requirements for the insulation. See 6.1.2.1 and 6.1.2.2 of this annex.	No TNV circuits	N/A
2.3.4	In **Norway**, for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.	No TNV circuits	N/A
2.6.3.3	In the **United Kingdom**, the current rating of the circuit shall be taken as 13 A, not 16 A.		N/A
2.7.1	In the **United Kingdom**, to protect against excessive currents and short-circuits in the PRIMARY CIRCUIT of DIRECT PLUG-IN EQUIPMENT, tests according to 5.3 shall be conducted, using an external protective device rated 30 A or 32 A. If these tests fail, suitable protective devices shall be included as integral parts of the DIRECT PLUG-IN EQUIPMENT, so that the requirements of 5.3 are met.	Not a direct plug-in equipment.	N/A
2.10.5.13	In **Finland**, **Norway** and **Sweden**, there are additional requirements for the insulation, see 6.1.2.1 and 6.1.2.2 of this annex.	No TNV circuits	N/A
3.2.1.1	In **Switzerland**, supply cords of equipment having a RATED CURRENT not exceeding 10 A shall be provided with a plug complying with SEV 1011 or IEC 60884-1 and one of the following dimension sheets: SEV 6532-2.1991 Plug Type 15 3P+N+PE 250/400 V, 10 A	Power cord is not provided in the equipment. Refer to Summary of Testing in main test report.	N/A

IEC/EN 60950-1 ATTACHMENT 1			
Clause	Requirement + Test	Result - Remark	Verdict

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	SEV 6533-2.1991 Plug Type 11 L+N 250 V, 10 A SEV 6534-2.1991 Plug Type 12 L+N+PE 250 V, 10 A In general, EN 60309 applies for plugs for currents exceeding 10 A. However, a 16 A plug and socket-outlet system is being introduced in Switzerland, the plugs of which are according to the following dimension sheets, published in February 1998: SEV 5932-2.1998: Plug Type 25 , 3L+N+PE 230/400 V, 16 A SEV 5933-2.1998:Plug Type 21, L+N, 250 V, 16A SEV 5934-2.1998: Plug Type 23, L+N+PE 250 V, 16 A		
3.2.1.1	In **Denmark**, supply cords of single-phase equipment having a rated current not exceeding13 A shall be provided with a plug according to the Heavy Current Regulations, Section 107-2-D1. 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 poly-phase equipment and single-phase equipment having a RATED CURRENT exceeding 13 A is provided with a supply cord with a plug, this plug shall be in accordance with the Heavy Current Regulations, Section 107-2-D1 or EN 60309-2.	Power cord is not provided in the equipment. Refer to Summary of Testing in main test report.	N/A
3.2.1.1 (A2:2013)	In **Denmark**, supply cords of single-phase equipment having a rated current not exceeding 13 A shall be provided with a plug according to DS 60884-2-D1. CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a. If a single-phase equipment having a RATED CURRENT exceeding 13 A or if a poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with the standard sheets DK 6-1a in DS 60884-2-D1 or EN 60309-2. Justification the Heavy Current Regulations, 6c	Power cord is not provided in the equipment. Refer to Summary of Testing in main test report.	N/A

IEC/EN 60950-1 ATTACHMENT 1			
Clause	Requirement + Test	Result - Remark	Verdict

ZB ANNEX (normative)

SPECIAL NATIONAL CONDITIONS (EN)

Clause	Requirement + Test	Result - Remark	Verdict
3.2.1.1	In **Spain**, supply cords of single-phase equipment having a rated current not exceeding 10 A shall be provided with a plug according to UNE 20315:1994. Supply cords of single-phase equipment having a rated current not exceeding 2,5 A shall be provided with a plug according to UNE-EN 50075:1993. 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 UNE 20315:1994. If poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with UNE-EN 60309-2.	Refer to Summary of Testing in main test report.	N/A
3.2.1.1	In the **United Kingdom**, apparatus 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 and plug, shall be fitted with a 'standard plug' in accordance with Statutory Instrument 1768:1994 - The Plugs and Sockets etc. (Safety) Regulations 1994, 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.	Power cord is not provided in the equipment. Refer to Summary of Testing in main test report.	N/A
3.2.1.1	In **Ireland**, apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to I.S. 411 by means of that flexible cable or cord and plug, shall be fitted with a 13 A plug in accordance with Statutory Instrument 525:1997 - National Standards Authority of Ireland (section 28) (13 A Plugs and Conversion Adaptors for Domestic Use) Regulations 1997.	Refer to Summary of Testing in main test report.	N/A
3.2.4	In **Switzerland**, for requirements see 3.2.1.1 of this annex.	Refer to Summary of Testing in main test report.	N/A
3.2.5.1	In the **United Kingdom**, a power supply cord with conductor of 1,25 mm2 is allowed for equipment with a rated current over 10 A and up to and including 13 A.	Refer to Summary of Testing in main test report.	N/A
3.3.4	In the **United Kingdom**, the range of conductor sizes of flexible cords to be accepted by terminals for equipment with a RATED CURRENT of over 10 A up to and including 13 A is: • 1,25 mm^2 to 1,5 mm^2 nominal cross-sectional area.	Refer to Summary of Testing in main test report.	N/A

IEC/EN 60950-1 ATTACHMENT 1			
Clause	Requirement + Test	Result - Remark	Verdict

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
4.3.6	In the **United Kingdom**, the torque test is performed using a socket outlet complying with BS 1363 part 1:1995, including Amendment 1:1997 and Amendment 2:2003 and 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 direct plug-in equipment	N/A
4.3.6	In **Ireland**, DIRECT PLUG-IN EQUIPMENT is known as plug similar devices. Such devices shall comply with Statutory Instrument 526:1997 - National Standards Authority of Ireland (Section 28) (Electrical plugs, plug similar devices and sockets for domestic use) Regulations, 1997.	Not direct plug-in equipment	N/A
5.1.7.1	In **Finland**, **Norway** and **Sweden** TOUCH CURRENT measurement results exceeding 3,5 mA r.m.s. are permitted only for the following equipment: • STATIONARY PLUGGABLE EQUIPMENT TYPE A that is intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, for example, in a telecommunication centre; and has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR; and is provided with instructions for the installation of that conductor by a SERVICE PERSON; • STATIONARY PLUGGABLE EQUIPMENT TYPE B; • STATIONARY PERMANENTLY CONNECTED EQUIPMENT.	Not exceeding 3.5 mA	N/A

IEC/EN 60950-1 ATTACHMENT 1			
Clause	Requirement + Test	Result - Remark	Verdict

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
6.1.2.1 (A1:2010)	In **Finland**, **Norway** and **Sweden**, add the following text between the first and second paragraph of the compliance clause: 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. Alternatively for components, there is no distance through insulation requirements 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 2.10.11 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 2.10.10 shall be performed using 1,5 kV), and - is subject to ROUTINE TESTING for electric strength during manufacturing, using a test voltage of 1,5 kV.	No TNV circuits	N/A
	It is permitted to bridge this insulation with an optocoupler complying with 2.10.5.4 b). 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 EN 60950-1:2006, 6.2.2.1; - 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.	No TNV circuits	N/A

IEC/EN 60950-1 ATTACHMENT 1			
Clause	Requirement + Test	Result - Remark	Verdict

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
6.1.2.2	In **Finland**, **Norway** and **Sweden**, the exclusions are applicable for PERMANENTLY CONNECTED EQUIPMENT, PLUGGABLE EQUIPMENT TYPE B and equipment intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, e.g. in a telecommunication centre, and which has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR and is provided with instructions for the installation of that conductor by a SERVICE PERSON.	Not for connection to cable distribution systems.	N/A
7.2	In **Finland**, **Norway** and **Sweden**, for requirements see 6.1.2.1 and 6.1.2.2 of this annex. The term TELECOMMUNICATION NETWORK in 6.1.2 being replaced by the term CABLE DISTRIBUTION SYSTEM.		N/A
7.3 (A11:2009)	In **Norway** and **Sweden**, for requirements see 1.2.13.14 and 1.7.2.1 of this annex.		N/A

IEC/EN 60950-1 ATTACHMENT 1			
Clause	Requirement + Test	Result - Remark	Verdict

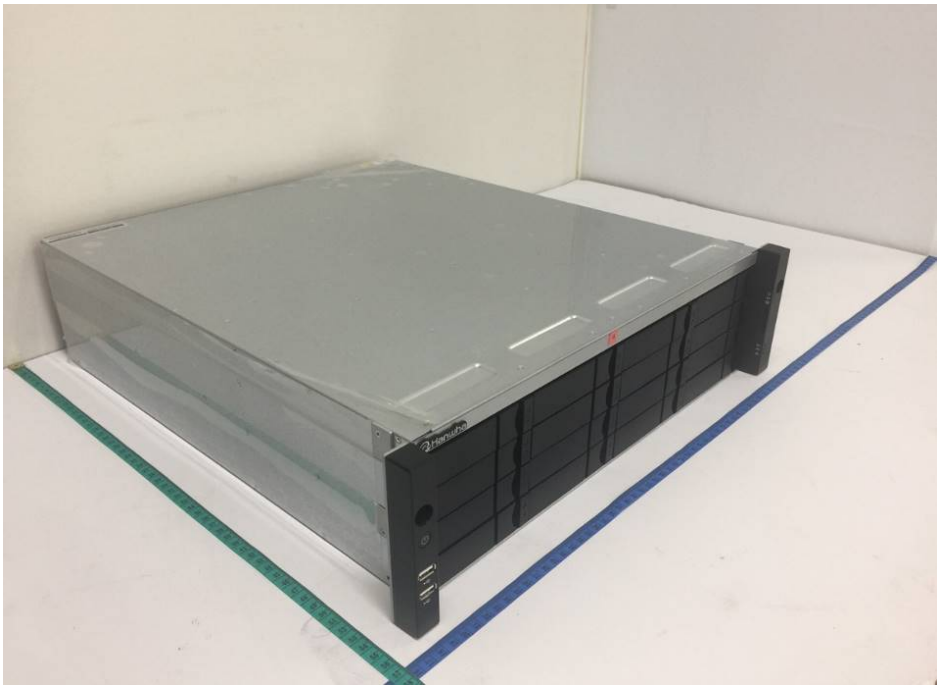
Annex ZD
(informative)

IEC and CENELEC code designations for flexible cords

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	60277 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

IEC/EN 60950-1 ATTACHMENT 2

Photograph



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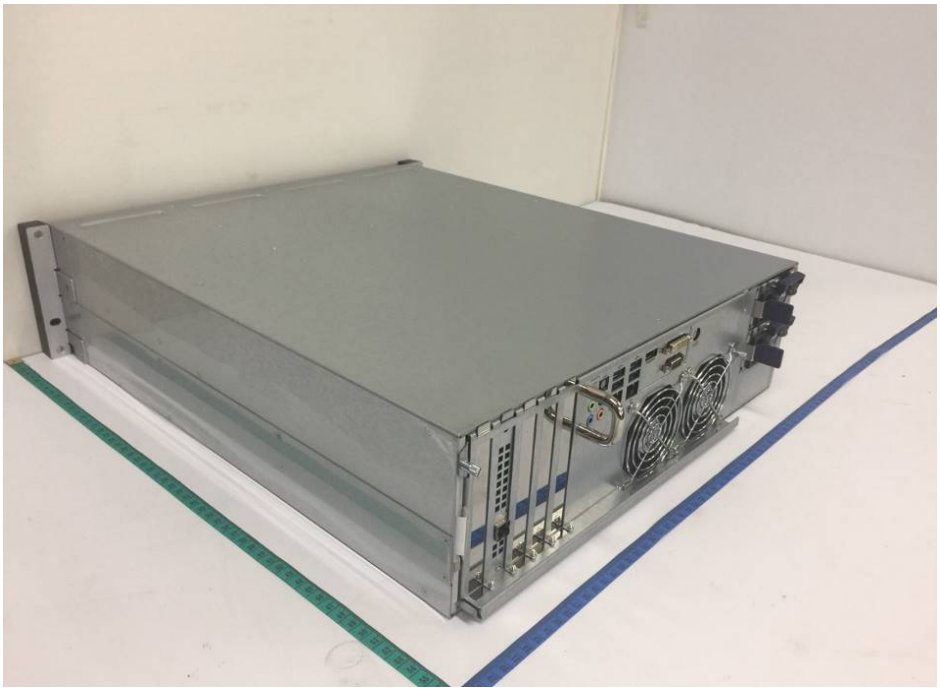

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IEC/EN 60950-1 ATTACHMENT 2

Photograph

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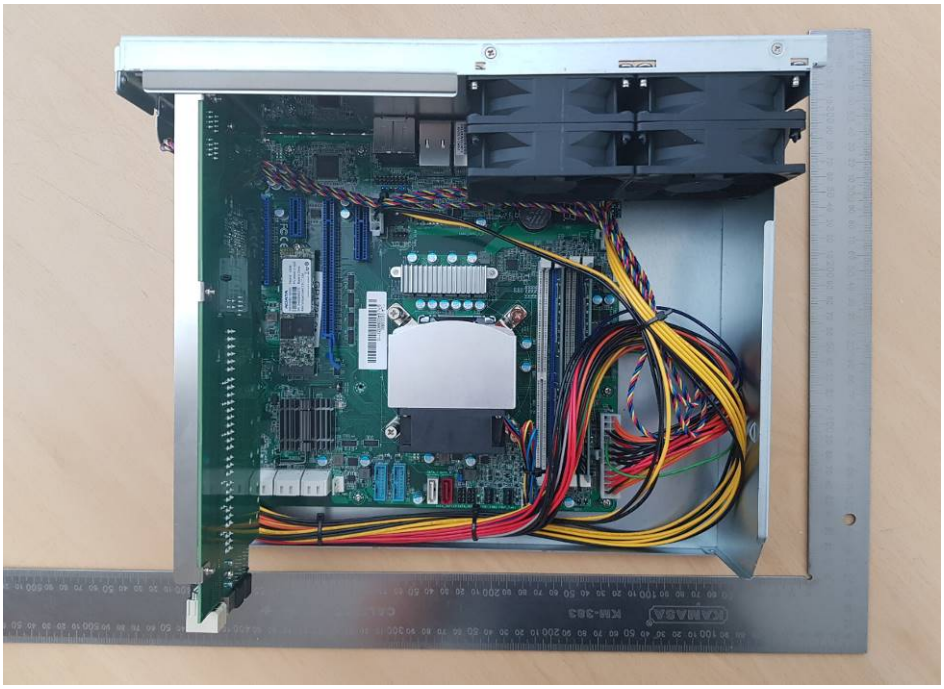
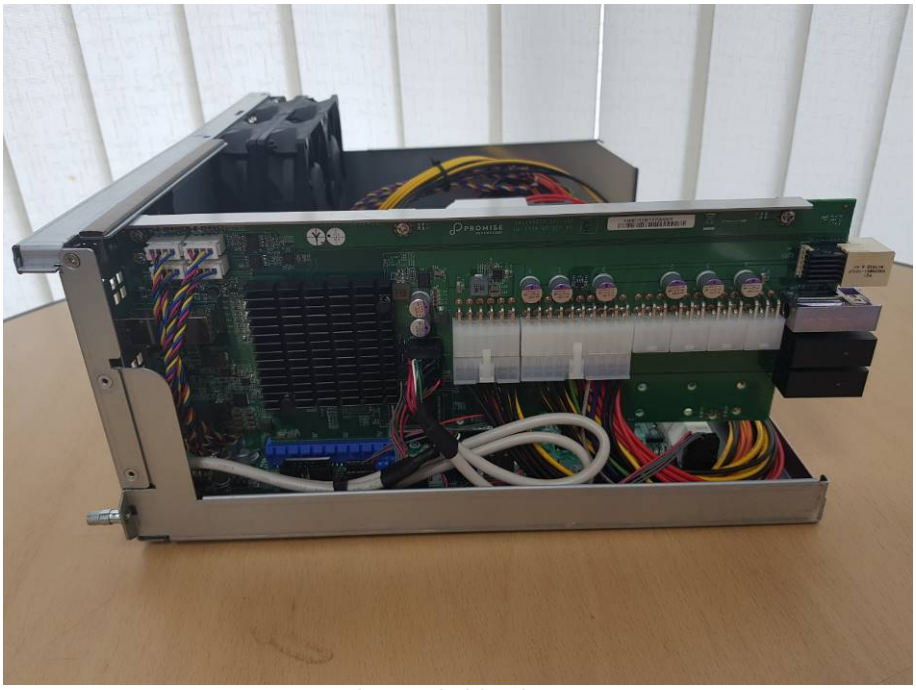


< Internal view >

IEC/EN 60950-1 ATTACHMENT 2

Photograph



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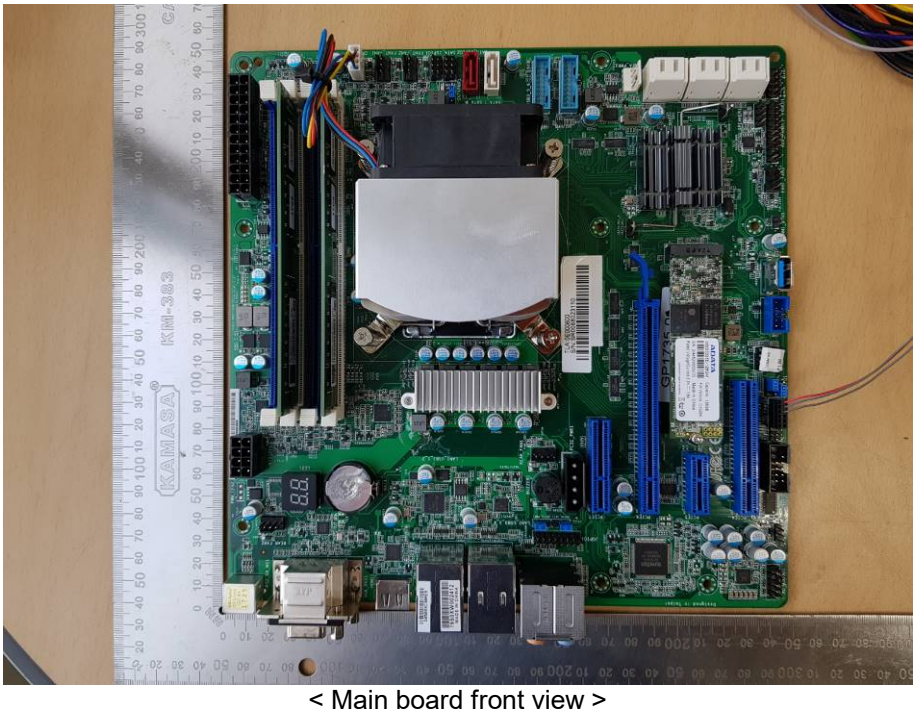

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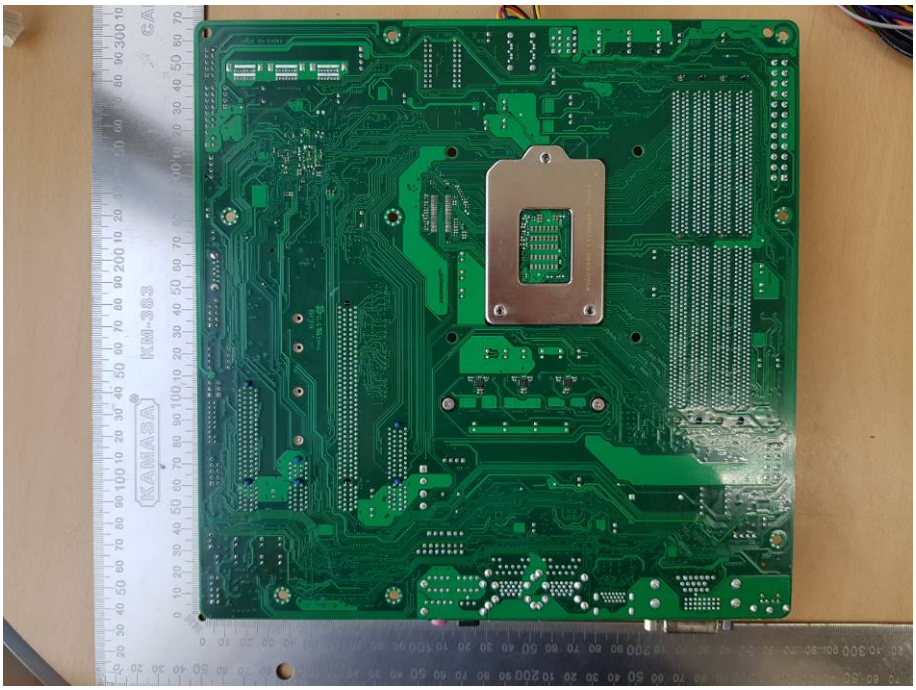
IEC/EN 60950-1 ATTACHMENT 2

Photograph



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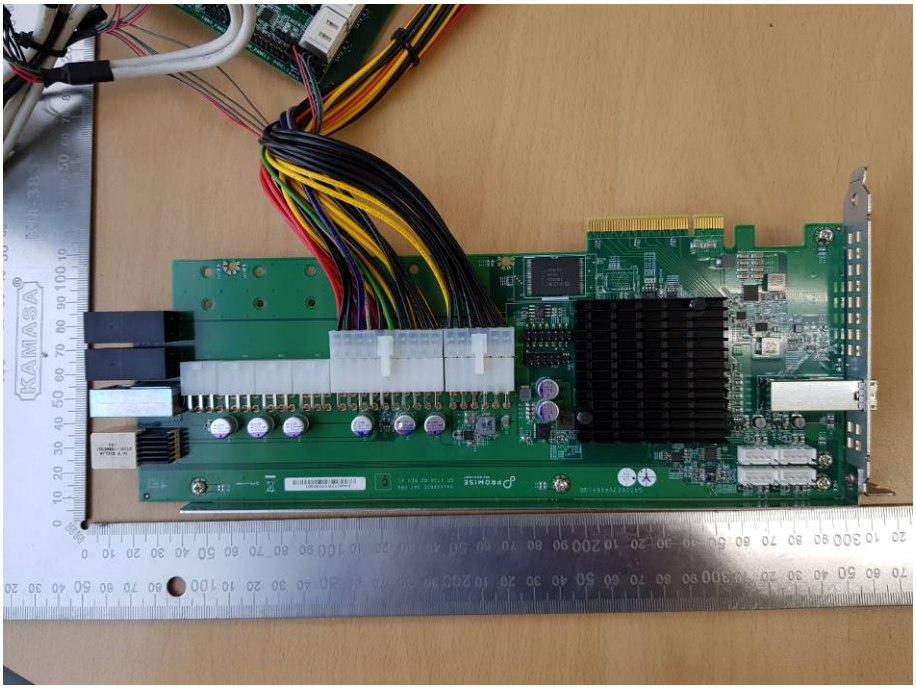

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IEC/EN 60950-1 ATTACHMENT 2

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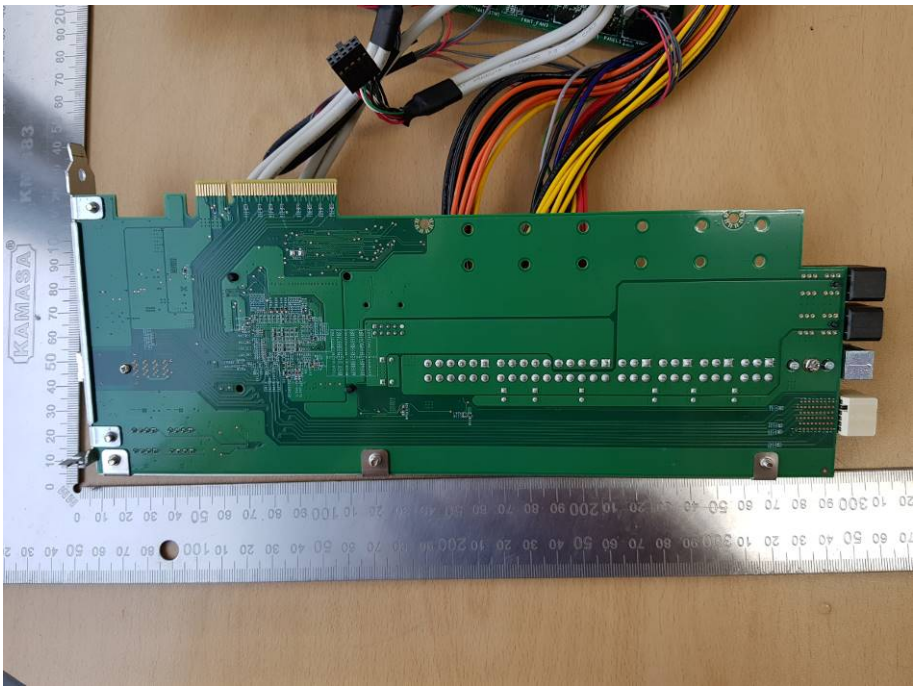

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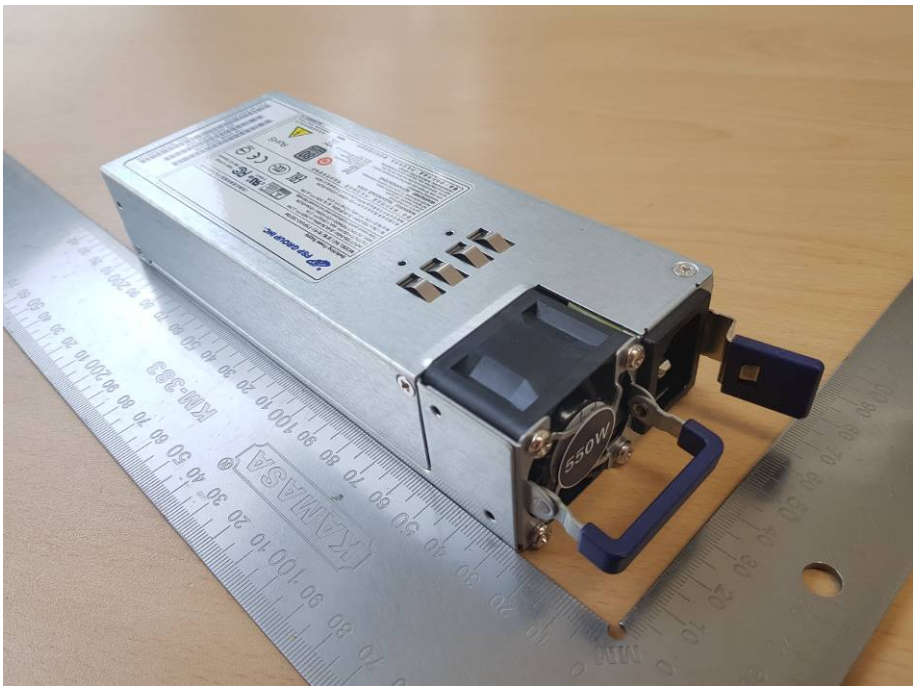
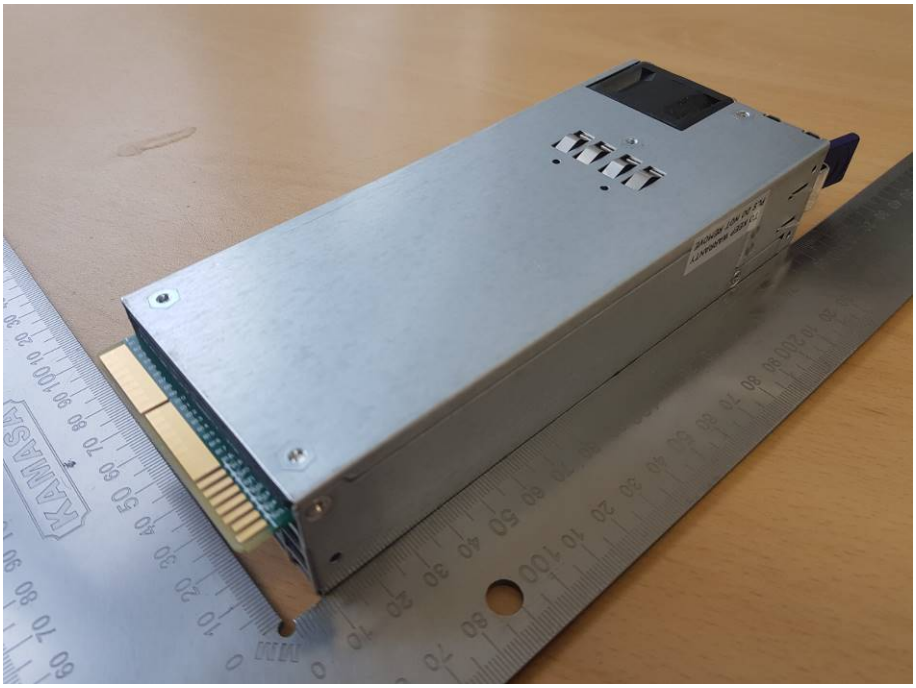


< Power supply unit front view >

IEC/EN 60950-1 ATTACHMENT 2

Photograph



< Power supply unit rear view >

- The end of test report -