TEST REPORT

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

Report Number..... :	SHES180700743901
Date of issue ..... :	2018-08-22
Total number of pages	40 pages
Applicant's name ..... :	Hangzhou Hikvision Digital Technology Co., Ltd.
Address..... :	No.555 Qianmo Road, Binjiang District, Hangzhou 310052, China
Test specification:	
Standard ..... :	IEC 60950-1:2005 (Second Edition) + Am 1:2009 + Am 2:2013
Test procedure ..... :	SGS-CSTC
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

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

General disclaimer:

The test results presented in this report relate only to the object tested.
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Test item description..... :	Wireless Security Control Panel
Trade Mark..... :	HIKVISION
Manufacturer ..... :	Same as applicant
Model/Type reference..... :	DS-PWA32-HSR, DS-PWA32-HGR, DS-PWA32-H, DS-PWA32-HG, DS-PWA32-HS, DS-PWA32-HR
Ratings..... :	5 V d.c., 2 A; Class III

Testing procedure and testing location:			
☒	**Testing Laboratory:**	SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.	
Testing location/ address.....:		588 West Jindu Road, Xinqiao, Songjiang, 201612 Shanghai, China	
☐	**Associated CB Testing Laboratory:**		
Testing location/ address.....:			
Tested by (name + signature) .....:		Jeson Li	Jeson. Li
Approved by (name + signature) .....:		Michael Xu	
☐	**Testing procedure: TMP/CTF Stage 1:**		
Testing location/ address.....:			
Tested by (name + signature) .....:			
Approved by (name + signature) .....:			
☐	**Testing procedure: WMT/CTF Stage 2:**		
Testing location/ address.....:			
Tested by (name + signature) .....:			
Witnessed by (name + signature).....:			
Approved by (name + signature) .....:			
☐	**Testing procedure: SMT/CTF Stage 3 or 4:**		
Testing location/ address.....:			
Tested by (name + signature) .....:			
Witnessed by (name + signature).....:			
Approved by (name + signature) .....:			
Supervised by (name + signature) .....:			

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

Attachment 1 – 7 pages of Photos documents;

Attachment 2 –19 pages of European group differences and national differences.

Summary of testing:

The sample(s) tested complies with the requirements of EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011 + A2:2013.

When determining the test conclusion, the Measurement Uncertainty of test has been considered.

The equipment under test (EUT) is powered by 5 Vd.c. powered from external power supply has been certified separately, details please see appended table 1.5.1.

Unless otherwise specified, the EUT with model DS-PWA32-HSR were selected as representative models for full testing.

Heating test (4.5):
Tma = 55°C (declared by manufacturer)

K-type thermocouple used for temperature measurement.

Tests performed (name of test and test clause):

☒ 1. GENERAL

☒ 2. PROTECTION FROM HAZARDS

☒ 3. WIRING, CONNECTIONS AND SUPPLY

☒ 4. PHYSICAL REQUIREMENTS

☒ 5. ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS

☐ 6. CONNECTION TO TELECOMMUNICATION NETWORKS

☐ 7. CONNECTION TO CABLE DISTRIBUTION SYSTEMS

Testing location:

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

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

Summary of compliance with National Differences:

List of countries addressed

1. EU Group Differences (EN 60950-1: 2006 + A11: 2009 + A1: 2010 + A12: 2011 + A2: 2013)
2. EU Special National Conditions, EU A-deviations: none

The product fulfils the above requirements.

Copy of marking plate:

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

Marking plate for model DS-PWA32-HSR

Remark:

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

2. The marking plates for other models are of the same pattern.

3. The height of CE logo should not be less than 5mm, and height of WEEE logo should be not less than 7mm.

External Power Supply (Model ADS-12B-06 05010E)

Test item particulars..... :	
Equipment mobility.....:	[] movable [] hand-held [] transportable [x] stationary [] for building-in [] direct plug-in
Connection to the mains.....:	[] pluggable equipment [] type A [] type B [] permanent connection [] detachable power supply cord [] non-detachable power supply cord [x] 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 [] OVC II [] OVC III [] OVC IV [x] not directly connected to the mains
Mains supply tolerance (%) or absolute mains supply values .....:	N/A
Tested for IT power systems .....:	[] Yes [x] No
IT testing, phase-phase voltage (V) .....:	
Class of equipment .....:	[] Class I [] Class II [x] Class III [] Not classified
Considered current rating of protective device as part of the building installation (A) .....:	N/A
Pollution degree (PD) .....:	[] PD 1 [x] PD 2 [] PD 3
IP protection class .....:	IPX0
Altitude during operation (m) .....:	≤ 2000
Altitude of test laboratory (m) .....:	≤ 100
Mass of equipment (kg) .....:	0,35kg

Possible test case verdicts:	
- test case does not apply to the test object.....:	N/A
- test object does meet the requirement.....:	P (Pass)
- test object does not meet the requirement.....:	F (Fail)
Testing.....:	
Date of receipt of test item .....:	2018-07-16
Date (s) of performance of tests .....:	2018-07-16 to 2018-07-27

General remarks:

"(see Enclosure #)" refers to additional information appended to the report.
"(see appended table)" refers to a table appended to the report.
Throughout this report a ☒ comma / ☐ point is used as the decimal separator.

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

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

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

Name and address of factory (ies) ..... : 1. Hangzhou Hikvision Technology Co., Ltd.
No. 700, Dongliu Road, Binjiang District, Hangzhou City, Zhejiang, 310052, China.
2. Hangzhou Hikvision Electronics Co., Ltd.
No. 299, Qiushi Road, Tonglu Economic Development Zone, Tonglu County, Hangzhou, Zhejiang, 310052, China.

General product information:

Functions	The equipment under test is a class III equipment, which contains SELV circuit only.
Model differences	All models are identical except the model name, software version and silkscreen.
Material of enclosure	Plastic
Other features	Indoor use only

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 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 tables 1.5.1)	P
1.5.2	Evaluation and testing of components		P
1.5.3	Thermal controls		N/A
1.5.4	Transformers		N/A
1.5.5	Interconnecting cables		P
1.5.6	Capacitors bridging insulation		N/A
1.5.7	Resistors bridging insulation		N/A
1.5.7.1	Resistors bridging functional, basic or supplementary insulation		N/A
1.5.7.2	Resistors bridging double or reinforced insulation between a.c. mains and other circuits		N/A
1.5.7.3	Resistors bridging double or reinforced insulation between a.c. mains and antenna or coaxial cable		N/A
1.5.8	Components in equipment for IT power systems	Class III equipment.	N/A
1.5.9	Surge suppressors		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
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	Class III equipment.	N/A
1.6.2	Input current	(see appended table 1.6.2)	P
1.6.3	Voltage limit of hand-held equipment	Not a hand-held equipment.	N/A
1.6.4	Neutral conductor	Class III equipment.	N/A
1.7	**Marking and instructions**		P
1.7.1	Power rating and identification markings		P
1.7.1.1	Power rating marking		P
	Multiple mains supply connections.....:		N/A
	Rated voltage(s) or voltage range(s) (V) .....:	See copy of marking plate.	P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Symbol for nature of supply, for d.c. only.....:	⎓	P
	Rated frequency or rated frequency range (Hz) ...:	See copy of marking plate.	P
	Rated current (mA or A) .....:	See copy of marking plate.	P
1.7.1.2	Identification markings		P
	Manufacturer's name or trade-mark or identification mark .....:	See copy of marking plate.	P
	Model identification or type reference .....:	See copy of marking plate.	P
	Symbol for Class II equipment only .....:	Class III 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		P
1.7.2.1	General	The user manual contains necessary information.	P
1.7.2.2	Disconnect devices		N/A
1.7.2.3	Overcurrent protective device		N/A
1.7.2.4	IT power distribution systems		N/A
1.7.2.5	Operator access with a tool		N/A
1.7.2.6	Ozone		N/A
1.7.3	Short duty cycles		N/A
1.7.4	Supply voltage adjustment .....:	No voltage adjustment.	N/A
	Methods and means of adjustment; reference to installation instructions .....:		N/A
1.7.5	Power outlets on the equipment .....:	No power outlet.	N/A
1.7.6	Fuse identification (marking, special fusing characteristics, cross-reference) .....:	No fuse.	N/A
1.7.7	Wiring terminals	See below	N/A
1.7.7.1	Protective earthing and bonding terminals .....:	Class III product, no earthing and bonding terminals.	N/A
1.7.7.2	Terminals for a.c. mains supply conductors		N/A
1.7.7.3	Terminals for d.c. mains supply conductors		N/A
1.7.8	Controls and indicators		N/A
1.7.8.1	Identification, location and marking .....:	No control and indicator affects safety.	N/A
1.7.8.2	Colours .....:		N/A
1.7.8.3	Symbols according to IEC 60417.....:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
1.7.8.4	Markings using figures .....:	No control uses figures.	N/A
1.7.9	Isolation of multiple power sources .....:	Not powered by multiple power sources	N/A
1.7.10	Thermostats and other regulating devices .....:	No Thermostats or other regulating devices	N/A
1.7.11	Durability	The marking withstands required tests.	P
1.7.12	Removable parts	No removable parts.	N/A
1.7.13	Replaceable batteries .....:	Lithium Battery	P
	Language(s) .....:	English	—
1.7.14	Equipment for restricted access locations .....:	No restricted areas.	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	Supplied by SELV, no hazards voltage inside the EUT	P
2.1.1.1	Access to energized parts	See below	P
	Test by inspection .....:		N/A
	Test with test finger (Figure 2A) .....:		N/A
	Test with test pin (Figure 2B) .....:		N/A
	Test with test probe (Figure 2C) .....:	No TNV circuit	N/A
2.1.1.2	Battery compartments		N/A
2.1.1.3	Access to ELV wiring	No internal wiring at ELV.	N/A
	Working voltage (Vpeak or Vrms); minimum distance through insulation (mm)		N/A
2.1.1.4	Access to hazardous voltage circuit wiring		N/A
2.1.1.5	Energy hazards .....:		N/A
2.1.1.6	Manual controls		N/A
2.1.1.7	Discharge of capacitors in equipment		N/A
	Measured voltage (V); time-constant (s) .....:		—
2.1.1.8	Energy hazards – d.c. mains supply	Not intended to connect to d.c. mains supply.	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 .....:		N/A
2.1.2	Protection in service access areas		P
2.1.3	Protection in restricted access locations	Not intended to be used in RAL.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
2.2	**SELV circuits**		P
2.2.1	General requirements	Supplied by SELV circuits	P
2.2.2	Voltages under normal conditions (V) .....:	Under SELV limit.	P
2.2.3	Voltages under fault conditions (V) .....:	Under SELV limit.	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 circuit.	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
2.4	**Limited current circuits**		N/A
2.4.1	General requirements	No limited current circuits.	N/A
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**		N/A
	a) Inherently limited output		N/A
	b) Impedance limited output		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	c) Regulating network or IC current limiter, limits output under normal operating and single fault condition		N/A
	Use of integrated circuit (IC) current limiters		N/A
	d) Overcurrent protective device limited output		N/A
	Max. output voltage (V), max. output current (A), max. apparent power (VA) .....:		—
	Current rating of overcurrent protective device (A) .:		—

2.6	**Provisions for earthing and bonding**		N/A
2.6.1	Protective earthing	Class III equipment.	N/A
2.6.2	Functional earthing		N/A
	Use of symbol for functional earthing .....:		N/A
2.6.3	Protective earthing and protective bonding conductors		N/A
2.6.3.1	General		N/A
2.6.3.2	Size of protective earthing conductors		N/A
	Rated current (A), cross-sectional area (mm^2), AWG ..... :		—
2.6.3.3	Size of protective bonding conductors		N/A
	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) ..... :		N/A
2.6.3.5	Colour of insulation ..... :		N/A
2.6.4	Terminals		N/A
2.6.4.1	General		N/A
2.6.4.2	Protective earthing and bonding terminals		N/A
	Rated current (A), type, nominal thread diameter (mm)..... :		—
2.6.4.3	Separation of the protective earthing conductor from protective bonding conductors		N/A
2.6.5	Integrity of protective earthing		N/A
2.6.5.1	Interconnection of equipment		N/A
2.6.5.2	Components in protective earthing conductors and protective bonding conductors		N/A
2.6.5.3	Disconnection of protective earth		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
2.6.5.4	Parts that can be removed by an operator		N/A
2.6.5.5	Parts removed during servicing		N/A
2.6.5.6	Corrosion resistance		N/A
2.6.5.7	Screws for protective bonding		N/A
2.6.5.8	Reliance on telecommunication network or cable distribution system		N/A
2.7	**Overcurrent and earth fault protection in primary circuits**		N/A
2.7.1	Basic requirements	Class III equipment.	N/A
	Instructions when protection relies on building installation		N/A
2.7.2	Faults not simulated in 5.3.7		N/A
2.7.3	Short-circuit backup protection		N/A
2.7.4	Number and location of protective devices ..... :		N/A
2.7.5	Protection by several devices		N/A
2.7.6	Warning to service personnel ..... :		N/A
2.8	**Safety interlocks**		N/A
2.8.1	General principles	No safety interlock used.	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
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		N/A
2.9.2	Humidity conditioning		N/A
	Relative humidity (%), temperature (°C) ..... :		—

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Clause	Requirement + Test	Result - Remark	Verdict
2.9.3	Grade of insulation	Class III equipment. Only functional insulation.	P
2.9.4	Separation from hazardous voltages		N/A
	Method(s) used ..... :		—

2.10	**Clearances, creepage distances and distances through insulation**		N/A
2.10.1	General	Class III equipment. Only functional insulation.	N/A
2.10.1.1	Frequency .....:	Powered by DC source.	N/A
2.10.1.2	Pollution degrees .....:	2	N/A
2.10.1.3	Reduced values for functional insulation		N/A
2.10.1.4	Intervening unconnected conductive parts		N/A
2.10.1.5	Insulation with varying dimensions		N/A
2.10.1.6	Special separation requirements		N/A
2.10.1.7	Insulation in circuits generating starting pulses		N/A
2.10.2	Determination of working voltage		N/A
2.10.2.1	General	Class III equipment. Only functional insulation.	N/A
2.10.2.2	RMS working voltage		N/A
2.10.2.3	Peak working voltage		N/A
2.10.3	Clearances		N/A
2.10.3.1	General	Class III equipment. Only functional insulation.	N/A
2.10.3.2	Mains transient voltages		N/A
	a) AC mains supply .....:		N/A
	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		N/A
2.10.3.4	Clearances in secondary circuits		N/A
2.10.3.5	Clearances in circuits having starting pulses		N/A
2.10.3.6	Transients from a.c. mains supply .....:		N/A
2.10.3.7	Transients from d.c. mains supply .....:		N/A
2.10.3.8	Transients from telecommunication networks and cable distribution systems .....:		N/A
2.10.3.9	Measurement of transient voltage levels		N/A
	a) Transients from a mains supply		N/A
	For an a.c. mains supply .....:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	For a d.c. mains supply .....:		N/A
	b) Transients from a telecommunication network :		N/A
2.10.4	Creepage distances		N/A
2.10.4.1	General		N/A
2.10.4.2	Material group and comparative tracking index		N/A
	CTI tests .....:		—
2.10.4.3	Minimum creepage distances		N/A
2.10.5	Solid insulation		N/A
2.10.5.1	General		N/A
2.10.5.2	Distances through insulation		N/A
2.10.5.3	Insulating compound as solid insulation		N/A
2.10.5.4	Semiconductor devices		N/A
2.10.5.5.	Cemented joints		N/A
2.10.5.6	Thin sheet material – General		N/A
2.10.5.7	Separable thin sheet material		N/A
	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		N/A
	Electric strength test		N/A
2.10.5.11	Insulation in wound components		N/A
2.10.5.12	Wire in wound components		N/A
	Working voltage .....:		N/A
	a) Basic insulation not under stress .....:		N/A
	b) Basic, supplementary, 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		N/A
	Electric strength test		—
	Routine test		N/A
2.10.5.14	Additional insulation in wound components		N/A
	Working voltage .....:		N/A
	- Basic insulation not under stress .....:		N/A
	- Supplementary, reinforced insulation .....:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
2.10.6	Construction of printed boards		N/A
2.10.6.1	Uncoated printed boards		N/A
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
	Number of insulation layers (pcs) .....:		N/A
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		N/A

3	**WIRING, CONNECTIONS AND SUPPLY**		P
3.1	**General**		P
3.1.1	Current rating and overcurrent protection	Adequate cross sectional areas on internal wiring.	P
3.1.2	Protection against mechanical damage	The wires are routed away from sharp edges and parts which could damage insulation.	P
3.1.3	Securing of internal wiring		P
3.1.4	Insulation of conductors		N/A
3.1.5	Beads and ceramic insulators		N/A
3.1.6	Screws for electrical contact pressure		N/A
3.1.7	Insulating materials in electrical connections		N/A
3.1.8	Self-tapping and spaced thread screws		N/A
3.1.9	Termination of conductors		N/A
	10 N pull test		N/A
3.1.10	Sleeving on wiring		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

3.2	**Connection to a mains supply**		N/A
3.2.1	Means of connection		N/A
3.2.1.1	Connection to an a.c. mains supply		N/A
3.2.1.2	Connection to a d.c. mains supply		N/A
3.2.2	Multiple supply connections		N/A
3.2.3	Permanently connected equipment		N/A
	Number of conductors, diameter of cable and conduits (mm) .....:		—
3.2.4	Appliance inlets		N/A
3.2.5	Power supply cords		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		N/A
	Mass of equipment (kg), pull (N) .....:		—
	Longitudinal displacement (mm) .....:		—
3.2.7	Protection against mechanical damage		N/A
3.2.8	Cord guards		N/A
	Diameter or minor dimension D (mm); test mass (g) .....:		—
	Radius of curvature of cord (mm) .....:		—
3.2.9	Supply wiring space		N/A

3.3	**Wiring terminals for connection of external conductors**		N/A
3.3.1	Wiring terminals		N/A
3.3.2	Connection of non-detachable power supply cords		N/A
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

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Clause	Requirement + Test	Result - Remark	Verdict
3.3.8	Stranded wire		N/A
3.4	**Disconnection from the mains supply**		N/A
3.4.1	General requirement	Not intended to connect to mains supply.	N/A
3.4.2	Disconnect devices		N/A
3.4.3	Permanently connected equipment		N/A
3.4.4	Parts which remain energized		N/A
3.4.5	Switches in flexible cords		N/A
3.4.6	Number of poles - single-phase and d.c. equipment		N/A
3.4.7	Number of poles - three-phase equipment		N/A
3.4.8	Switches as disconnect devices		N/A
3.4.9	Plugs as disconnect devices		N/A
3.4.10	Interconnected equipment		N/A
3.4.11	Multiple power sources		N/A
3.5	**Interconnection of equipment**		P
3.5.1	General requirements	See below	P
3.5.2	Types of interconnection circuits .....:	Only SELV circuits connection.	P
3.5.3	ELV circuits as interconnection circuits	No ELV circuit.	N/A
3.5.4	Data ports for additional equipment		P
4	**PHYSICAL REQUIREMENTS**		P
4.1	**Stability**		N/A
	Angle of 10°		N/A
	Test force (N) .....:	Not floor-standing equipment.	N/A
4.2	**Mechanical strength**		P
4.2.1	General		P
	Rack-mounted equipment.		N/A
4.2.2	Steady force test, 10 N	No damage, no hazards.	P
4.2.3	Steady force test, 30 N		N/A
4.2.4	Steady force test, 250 N	No damage, no hazards.	P
4.2.5	Impact test		P
	Fall test		N/A
	Swing test		P

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Clause	Requirement + Test	Result - Remark	Verdict
4.2.6	Drop test; height (mm) .....:	0,75m	P
4.2.7	Stress relief test	70°C, 7h	P
4.2.8	Cathode ray tubes	No cathode ray tube.	N/A
	Picture tube separately certified .....:		N/A
4.2.9	High pressure lamps	No high pressure lamp.	N/A
4.2.10	Wall or ceiling mounted equipment; force (N) .....:		N/A
4.3	**Design and construction**		P
4.3.1	Edges and corners	All edges and corners are rounded and smoothed.	P
4.3.2	Handles and manual controls; force (N) .....:	No such part.	N/A
4.3.3	Adjustable controls	No adjustable control.	N/A
4.3.4	Securing of parts		N/A
4.3.5	Connection by plugs and sockets		N/A
4.3.6	Direct plug-in equipment	Not direct plug-in equipment.	N/A
	Torque .....:		—
	Compliance with the relevant mains plug standard .....:		N/A
4.3.7	Heating elements in earthed equipment		N/A
4.3.8	Batteries		P
	- Overcharging of a rechargeable battery		P
	- Unintentional charging of a non-rechargeable battery		N/A
	- Reverse charging of a rechargeable battery		P
	- Excessive discharging rate for any battery		P
4.3.9	Oil and grease		N/A
4.3.10	Dust, powders, liquids and gases		N/A
4.3.11	Containers for liquids or gases		N/A
4.3.12	Flammable liquids .....:		N/A
	Quantity of liquid (l) .....:		N/A
	Flash point (°C) .....:		N/A
4.3.13	Radiation		P
4.3.13.1	General	See below	P
4.3.13.2	Ionizing radiation		N/A
	Measured radiation (pA/kg) .....:		—
	Measured high-voltage (kV) .....:		—
	Measured focus voltage (kV) .....:		—

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Clause	Requirement + Test	Result - Remark	Verdict
	CRT markings .....:		—
4.3.13.3	Effect of ultraviolet (UV) radiation on materials		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	See below	P
4.3.13.5.1	Lasers (including laser diodes)		N/A
	Laser class .....:		—
4.3.13.5.2	Light emitting diodes (LEDs)	The LED lamp only used as indicating.	—
4.3.13.6	Other types .....:		N/A
4.4	**Protection against hazardous moving parts**		N/A
4.4.1	General		N/A
4.4.2	Protection in operator access areas .....:		N/A
	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		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		P
4.5.2	Temperature tests		P
	Normal load condition per Annex L .....:	(see appended Annex L)	—
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 .....:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

4.6	**Openings in enclosures**		P
4.6.1	Top and side openings	Openings do not allow foreign objects entering the equipment to fall on bare parts. Also, openings are not located within 5° of fire hazardous parts.	P
	Dimensions (mm) .....:	Front side: no openings.;Top side: no openings; Rear side: nemberous orthogon openings provided max side dimension 5,22mm x 1,37mm; Left side: no openings; Right side: no openings.	—
4.6.2	Bottoms of fire enclosures	See blew.	P
	Construction of the bottomm, dimensions (mm) ..:	No openings.	—
4.6.3	Doors or covers in fire enclosures		N/A
4.6.4	Openings in 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		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		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	See below	P
4.7.2.1	Parts requiring a fire enclosure		P
4.7.2.2	Parts not requiring a fire enclosure		N/A
4.7.3	Materials		P
4.7.3.1	General	Components and materials have adequate flammability classification. See appended table 1.5.1.	P
4.7.3.2	Materials for fire enclosures	Fire enclosure constructed by 5VB plastic.	P

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Clause	Requirement + Test	Result - Remark	Verdict
4.7.3.3	Materials for components and other parts outside fire enclosures	Plastic enclosure apply fire enclosures.	P
4.7.3.4	Materials for components and other parts inside fire enclosures	Other materials inside fire enclosure are minimum V-2 material.	P
4.7.3.5	Materials for air filter assemblies	No air filter.	N/A
4.7.3.6	Materials used in high-voltage components	No high-voltage component.	N/A
5	**ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS**		P
5.1	**Touch current and protective conductor current**		N/A
5.1.1	General	Class III equpment, not directly connected to mains.	N/A
5.1.2	Configuration of equipment under test (EUT)		N/A
5.1.2.1	Single connection to an a.c. mains supply		N/A
5.1.2.2	Redundant multiple connections to an a.c. mains supply		N/A
5.1.2.3	Simultaneous multiple connections to an a.c. mains supply		N/A
5.1.3	Test circuit		N/A
5.1.4	Application of measuring instrument		N/A
5.1.5	Test procedure		N/A
5.1.6	Test measurements		N/A
	Supply voltage (V) ..... :		—
	Measured touch current (mA) ..... :		—
	Max. allowed touch current (mA) ..... :		—
	Measured protective conductor current (mA) ..... :		—
	Max. allowed protective conductor current (mA) .. :		—
5.1.7	Equipment with touch current exceeding 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		N/A
5.1.8.1	Limitation of the touch current to a telecommunication network or to a cable distribution system		N/A
	Supply voltage (V) ..... :		—
	Measured touch current (mA) ..... :		—
	Max. allowed touch current (mA) ..... :		—

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Clause	Requirement + Test	Result - Remark	Verdict
5.1.8.2	Summation of touch currents from telecommunication networks		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**		N/A
5.2.1	General		N/A
5.2.2	Test procedure		N/A
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		N/A
5.3.3	Transformers	No transformer.	N/A
5.3.4	Functional insulation ..... :	Complies with c).	P
5.3.5	Electromechanical components		N/A
5.3.6	Audio amplifiers in ITE ..... :	No louder speaker	N/A
5.3.7	Simulation of faults	See appended table 5.3.	P
5.3.8	Unattended equipment		N/A
5.3.9	Compliance criteria for abnormal operating and fault conditions	See below.	P
5.3.9.1	During the tests	No fire occurred beyond the equipment, no molten metal emitted and no deformation of enclosure.	P
5.3.9.2	After the tests		N/A
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		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

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Clause	Requirement + Test	Result - Remark	Verdict
6.2.1	Separation requirements		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
6.3	**Protection of the telecommunication wiring system from overheating**		N/A
	Max. output current (A) ..... :		—
	Current limiting method ..... :		—
7	**CONNECTION TO CABLE DISTRIBUTION SYSTEMS**		N/A
7.1	**General**		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)**		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)..... :		—

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Clause	Requirement + Test	Result - Remark	Verdict
	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) ..... :		—
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**		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) ..... :		—

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Clause	Requirement + Test	Result - Remark	Verdict
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
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 .....:		—
	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)**		N/A
D.1	**Measuring instrument**		N/A
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)**		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G	**ANNEX G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES**		N/A
G.1	**Clearances**		N/A
G.1.1	General		N/A
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

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Clause	Requirement + Test	Result - Remark	Verdict
K.6	Stability of operation		N/A
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		P
M	**ANNEX M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)**		N/A
M.1	Introduction		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**		—
Q	**ANNEX Q, Voltage dependent resistors (VDRs) (see 1.5.9.1)**		N/A
	- Preferred climatic categories .....:		N/A
	- Maximum continuous voltage .....:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- 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)**		N/A
V.1	Introduction		N/A
V.2	TN power distribution systems		N/A
W	**ANNEX W, SUMMATION OF TOUCH CURRENTS**		N/A
W.1	Touch current from electronic circuits		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
W.2.3	Common return, connected to protective earth		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
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)**		N/A
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

IEC 60950-1			
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 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])
External power supply	Shenzhen HONOR Electronic Co., Ltd	ADS-12B-06 05010E	I/P: 100-240Vac, 50/60Hz, max. 0,3A; O/P: 5Vdc, 2A	EN 60950-1: 2006 +A11+ A1+ A12+A2	UL CB Cert. No.: DK-47521-UL Report No.: 1507604-CB
Plastic enclosure	Covestro polymers (China) Co., Ltd.	FR3010 + (z)	5VB, Min. thickness 2,0 mm, 85°C	UL94	UL E41613
RTC Battery	Seiko Instruments Inc.	ML414H	3Vdc, Max Charging Current 300mA, Max Charging Voltage 3,4Vdc	UL 1642	UL MH15628
Lithium Battery	Li-Fun Technology Co., Ltd	765965	3,8Vdc, 4520mAh	IEC 62133-2:2017	TUVRheinland CB Cert. No: JPTUV-089405 Report No.: 5015567 001
PCB	Interchangeable	Interchangeable	V-1, 105°C	UL 796	UL
Speaker	Shanghai iec-sh Electronic Co., Ltd	P20P08-1+W-R	8Ω, 1W	EN 60950-1: 2006 +A11+ A1+ A12+A2	Test with appliance
Internal wire	Interchangeable	Interchangeable	PVC, TFE, PTFE, FEP, polychloroprene or polyimide or VW-1	--	--

Supplementary information:

[1]) **Provided evidence ensures the agreed level of compliance. See OD-CB2039**.

1.5.1	TABLE: Opto Electronic Devices	N/A

Manufacturer .....:
Type .....:
Separately tested .....:
Bridging insulation.....:
External creepage distance .....:
Internal creepage distance .....:
Distance through insulation .....:
Tested under the following conditions .....:

Input .....:

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
Output .....:			
supplementary information			

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

1.6.2	TABLE: Electrical data (in normal conditions)					P
U (V)	I (A)	Irated (A)	P (W)	Fuse #	Ifuse (A)	Condition/status
5,0 (External power supply powered)	1,04	2,00	5,20	--	--	Powered by external power supply with empty battery pack.
3,8 (Lithium Battery powered)	0,45	0,922	1,71	--	--	Powered by fully battery pack.
Supplementary information:						

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:				

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	N/A

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:	
--	

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

2.5	TABLE: Limited power sources	N/A

Circuit output tested:

Note: Measured Uoc (V) with all load circuits disconnected:

Components	Sample No.	Uoc (V)	I_{sc} (A)		VA	
			Meas.	Limit	Meas.	Limit
--	--	--	--	--	--	--

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	N/A

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:--						

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:--					

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

4.3.8	TABLE: Batteries								P
The tests of 4.3.8 are applicable only when appropriate battery data is not available						Appropriate battery data is not available			P
Is it possible to install the battery in a reverse polarity position?						No			P
	Non-rechargeable batteries			Rechargeable batteries					
	Discharging		Un-intentional charging	Charging		Discharging		Reversed charging	
	Meas. current	Manuf. Specs.		Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.
RTC Battery									
Max. current during normal condition	--	--	--	4,34mA	300mA	0,01mA	--	Prevented	Prevented
Max. current during fault condition	--	--	--	24,21mA (RCBA3 shorted)	300mA	1,86mA (CC63 shorted)	--	Prevented	Prevented
Lithium Battery									
Max. current during normal condition	--	--	--	920mA	2305mA	450mA	2305mA	Prevented	Prevented
Max. current during fault condition	--	--	--	1040mA (U2 pin2,3-5,6 shorted) 1331mA (UV3 pin1,24-13,14 shorted)	13830mA	540mA (U2 pin2,3-5,6 shorted) 1255mA (UV3 pin1,24-13,14 shorted)	4610mA	Prevented	Prevented
Test results:									Verdict
- Chemical leaks						No			P
- Explosion of the battery						No			P
- Emission of flame or expulsion of molten metal						No			P
- Electric strength tests of equipment after completion of tests									N/A
Supplementary information:									

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

4.3.8	TABLE: Batteries	N/A

Battery category.....: Lithium Battery

Manufacturer.....: See appended table 1.5.1

Type / model .....: See appended table 1.5.1

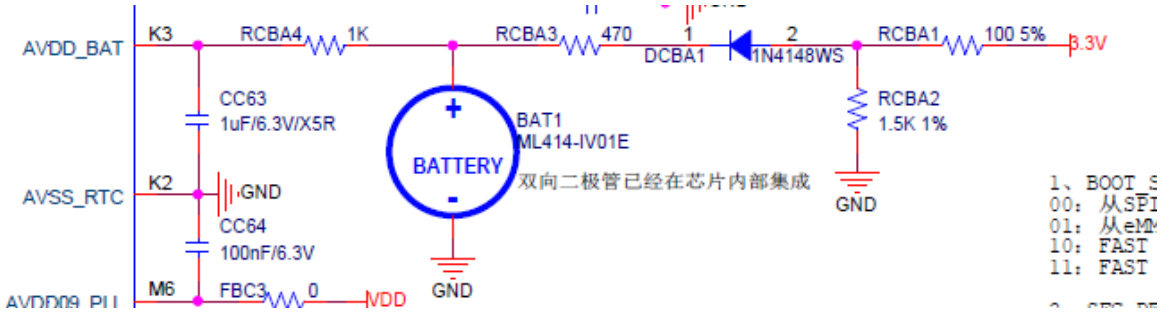
Voltage.....: See appended table 1.5.1

Capacity.....: See appended table 1.5.1

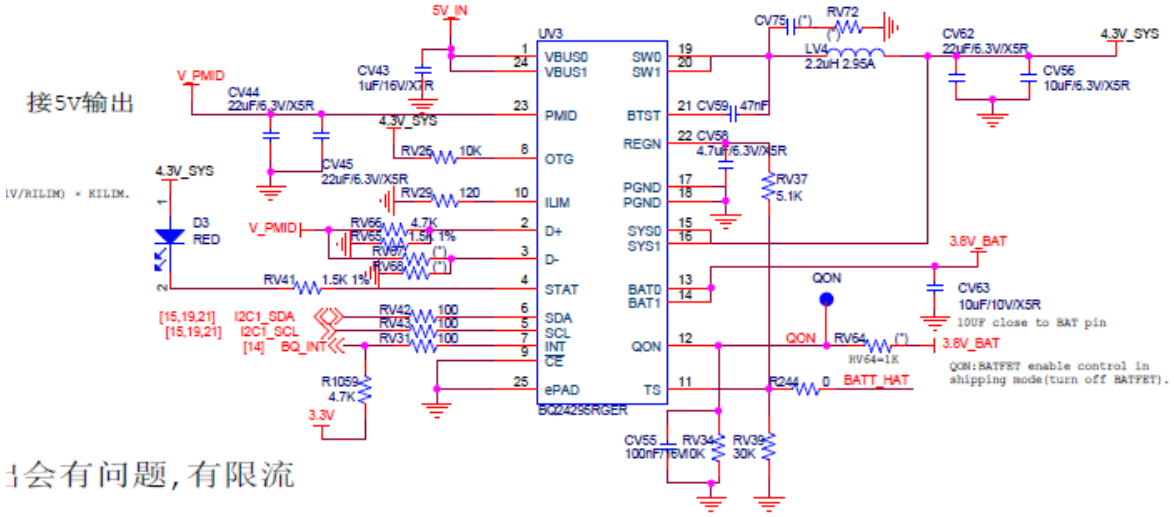
Tested and Certified by (incl. Ref. No.).....: See appended table 1.5.1

Circuit protection diagram:

RTC Battery



Lithium Battery



MARKINGS AND INSTRUCTIONS (1.7.13)	
Location of replaceable battery	Located in service access area, can't be replaced by operator.
Language(s) .....:	English
Close to the battery .....:	N/A
In the servicing instructions .....:	N/A
In the operating instructions .....:	N/A

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

4.5	TABLE: Thermal requirements							P
	Supply voltage (V)	1)	2)	90V 60Hz Horizontal	90V 60Hz Vertical	264V 50Hz Horizontal	264V 50Hz Vertical	—
	Ambient T_{min} (°C)	55,0	55,0	55,0	55,0	55,0	55,0	—
	Ambient T_{max} (°C)	55,0	55,0	55,0	55,0	55,0	55,0	—
Maximum measured temperature T of part/at.....:		T (°C)						Allowed T_{max} (°C)
LF101 coil (External power supply)		--	--	86,1	87,9	73,9	76,8	130
C101 body (External power supply)		--	--	86,5	86,7	79,2	80,8	105
T1 coil (External power supply)		--	--	97,9	96,9	97,6	97,1	110
T1 core (External power supply)		--	--	98,2	97,2	98,3	97,9	110
PCB near BD1 (External power supply)		--	--	96,0	95,7	92,0	92,8	130
CY1 body (External power supply)		--	--	83,3	82,4	82,9	82,5	125
Internal plastic enclosure near T1 (External power supply)		--	--	81,2	78,1	80,5	78,0	120
External plastic enclosure near T1 (External power supply)		--	--	73,3	68,0	73,4	68,5	95
Plug holder (External power supply)		--	--	56,9	57,5	57,7	57,2	70
PCB near UCM0		68,0	63,8	--	--	--	--	105
PCB near UCM1		71,8	67,0	--	--	--	--	105
Wi-fi module		66,2	62,7	--	--	--	--	105
PCB near TN2		65,6	62,1	--	--	--	--	105
BAT1 body		65,5	63,8	--	--	--	--	Ref.
PCB near U88		68,7	63,7	--	--	--	--	105
Internal plastic enclosure near lithium battery		59,8	58,9	--	--	--	--	60
External plastic enclosure near lithium battery		59,7	58,8	--	--	--	--	60
Lithium battery body		65,3	61,8	--	--	--	--	Ref.
Supplementary information: 1) Powered by external power supply with empty battery pack. 2) Powered by fully battery pack.								

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:							

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

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

Part	Test temperature (°C)	Impression diameter (mm)
--	--	--
Supplementary information:		

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

5.1	TABLE: touch current measurement			N/A
Measured between:	Measured (mA)	Limit (mA)	Comments/conditions	
--	--	--	--	
supplementary information:				

5.2	TABLE: Electric strength tests, impulse tests and voltage surge tests			N/A
Test voltage applied between:		Voltage shape (AC, DC, impulse, surge)	Test voltage (V)	Breakdown Yes / No
Functional:				
--		--	--	--
Basic/supplementary:				
--		--	--	--
Reinforced:				
--		--	--	--
Supplementary information:				

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

5.3	TABLE: Fault condition tests						P
	Ambient temperature (°C) .....:					24,5	—
	Power source for EUT: Manufacturer, model/type, output rating .....:					--	—
Component No.	Fault	Supply voltage (V)	Test time	Fuse #	Fuse current (A)	Observation	
Openings	Blocked	12Vdc	1h6mins	--	--	The EUT operated normally. The higher tempreture of: PCB near UCM1: 39,4°C, Ambient: 26,7°C No damage, no hazards.	
RTC Battery							
RCBA3 (Overcharging)	Sc	12Vdc	7h	--	--	The EUT normal operation. No damage, no hazards.	
CC63	Sc	12Vdc	10mins	--	--	The EUT normal operation. No damage, no hazards.	
Lithium Battery							
UV3 pin1,24-13,14 (Overcharge ing)	Sc	12Vdc	7h	--	--	The EUT normal operation. No damage, no hazards.	
UV3 pin1,24-13,14 (Overdischa rge)	Sc	12Vdc	7h	--	--	The EUT normal operation. No damage, no hazards.	
U2 pin2,3-6,7 (Overcharge ing)	Sc	12Vdc	7h	--	--	The EUT normal operation. No damage, no hazards.	
U2 pin2,3-6,7 (Overdischa rge)	Sc	12Vdc	7h	--	--	The EUT normal operation. No damage, no hazards.	
Supplementary information: Sc=Short circuit							

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

C.2	TABLE: transformers	N/A

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
--	--	--	--	--	--

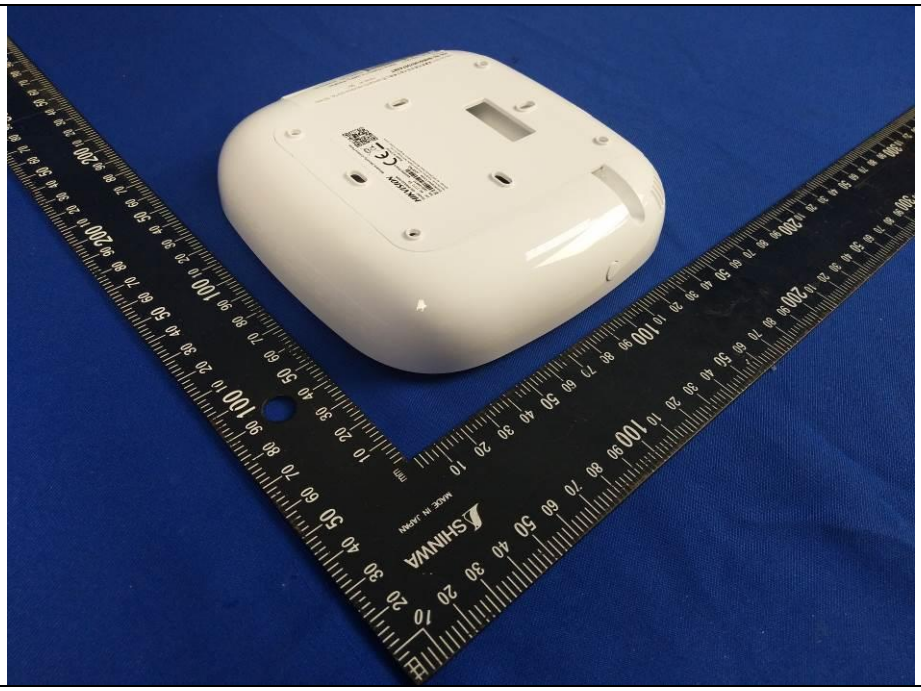
supplementary information:

C.2	TABLE: transformers	N/A
Transformer		

*******End of test report*******

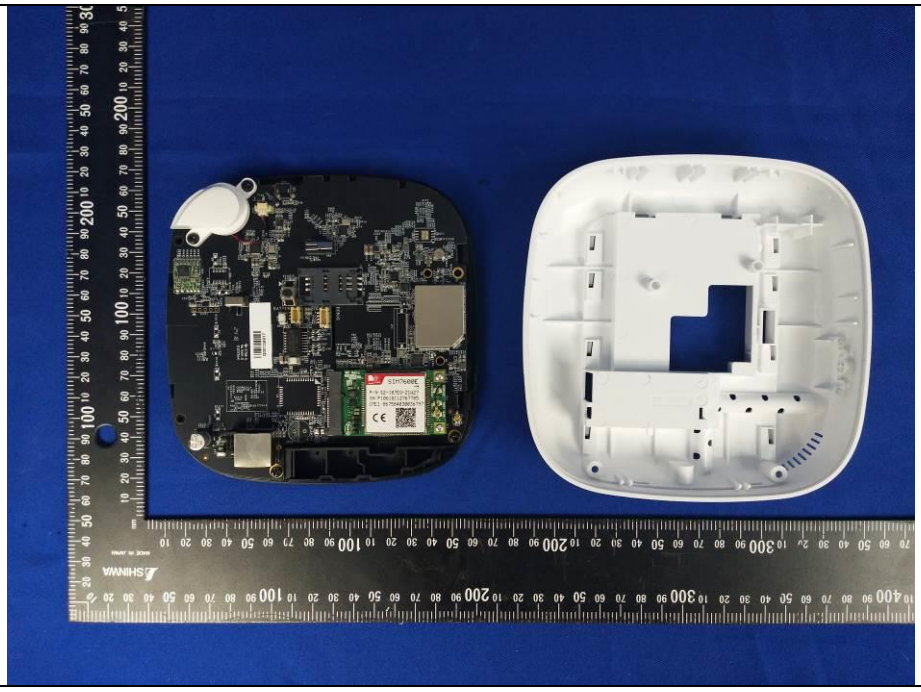
Details of: General view (Model DS-PWA32-HSR)

Details of: General view (Model DS-PWA32-HSR)

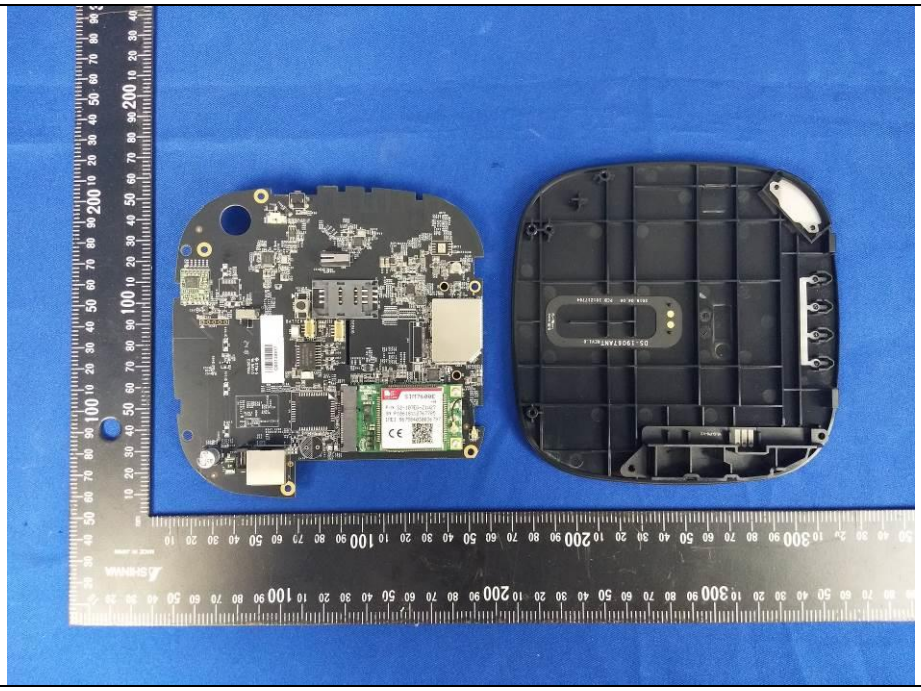


Details of: Internal view (Model DS-PWA32-HSR)

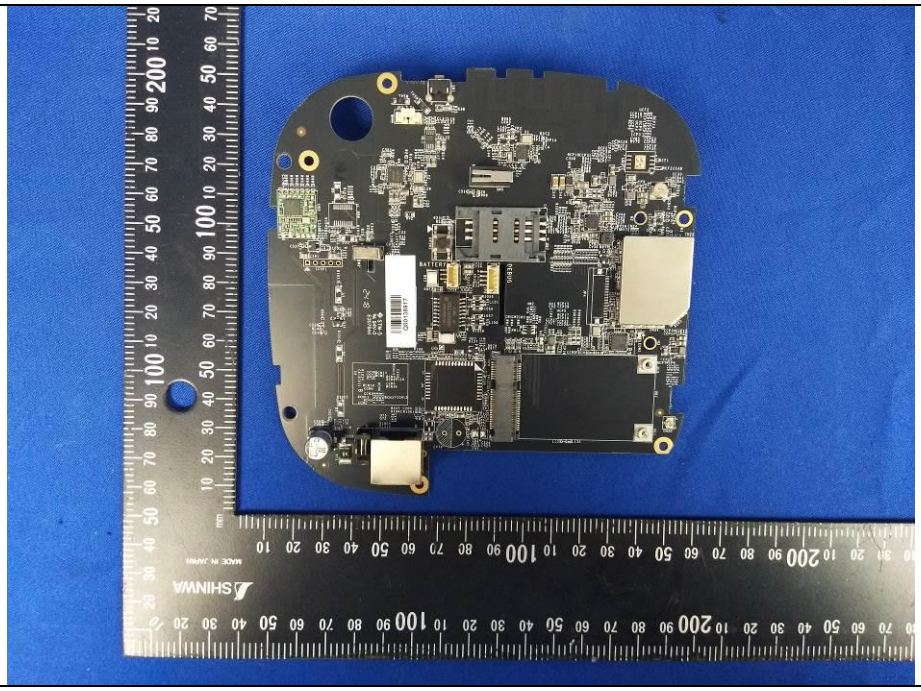
Details of: Internal view (Model DS-PWA32-HSR)



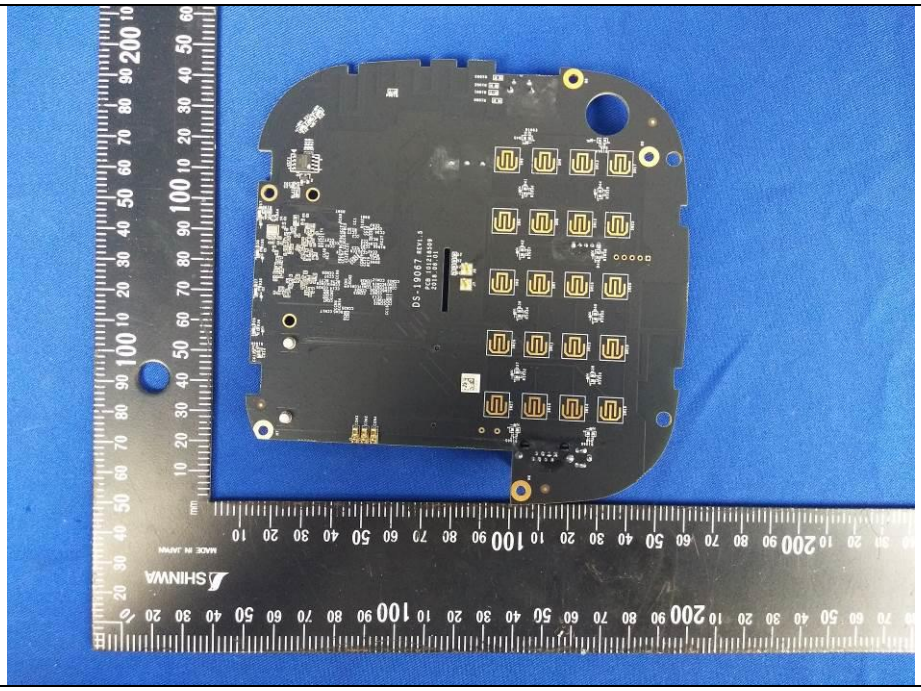
Details of: Internal view (Model DS-PWA32-HSR)



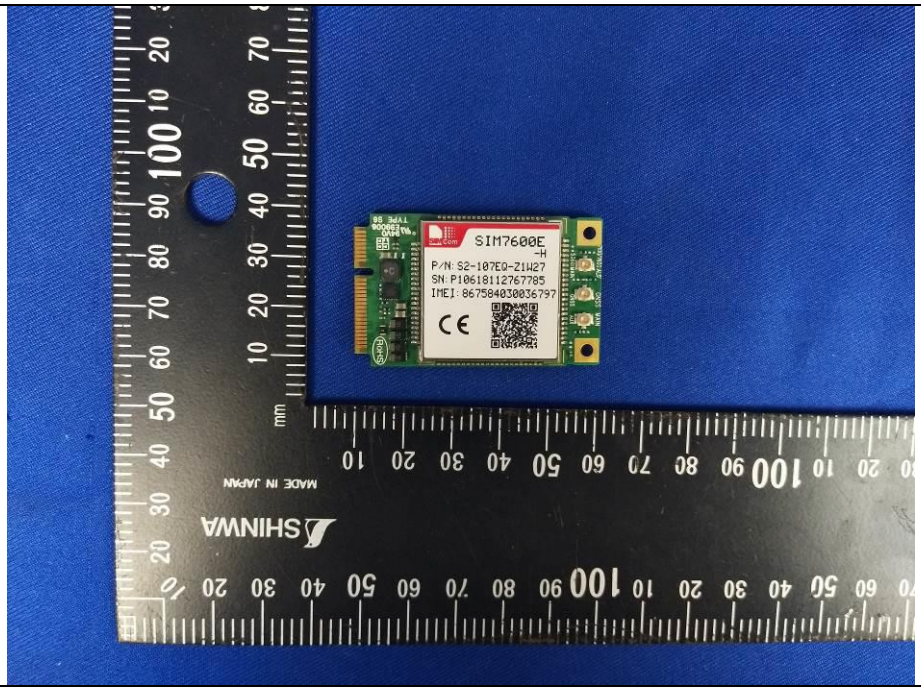
Details of: PCB-1



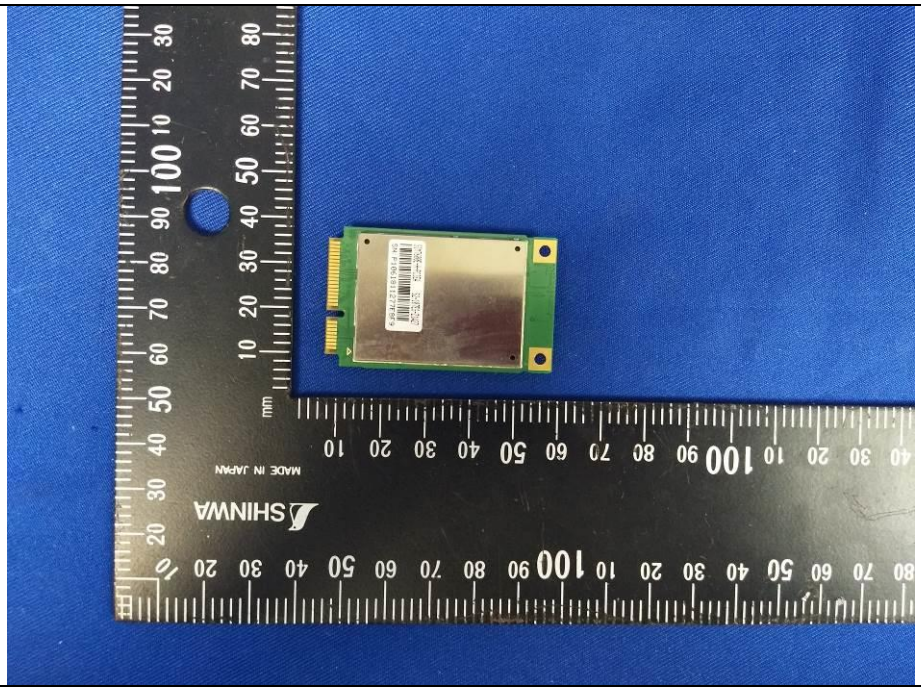
Details of: PCB-1



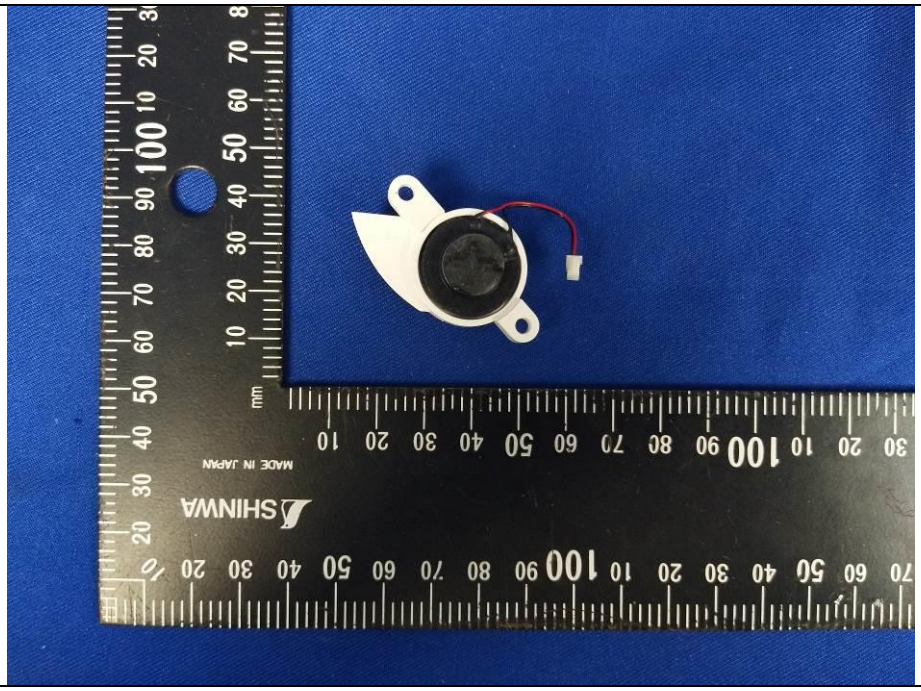
Details of: PCB-2



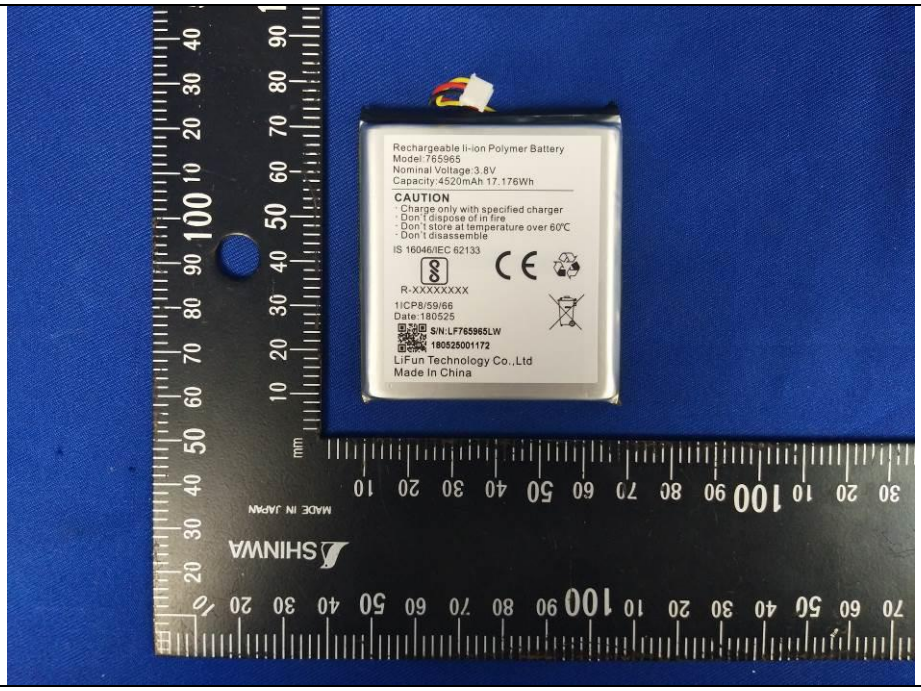
Details of: PCB-2



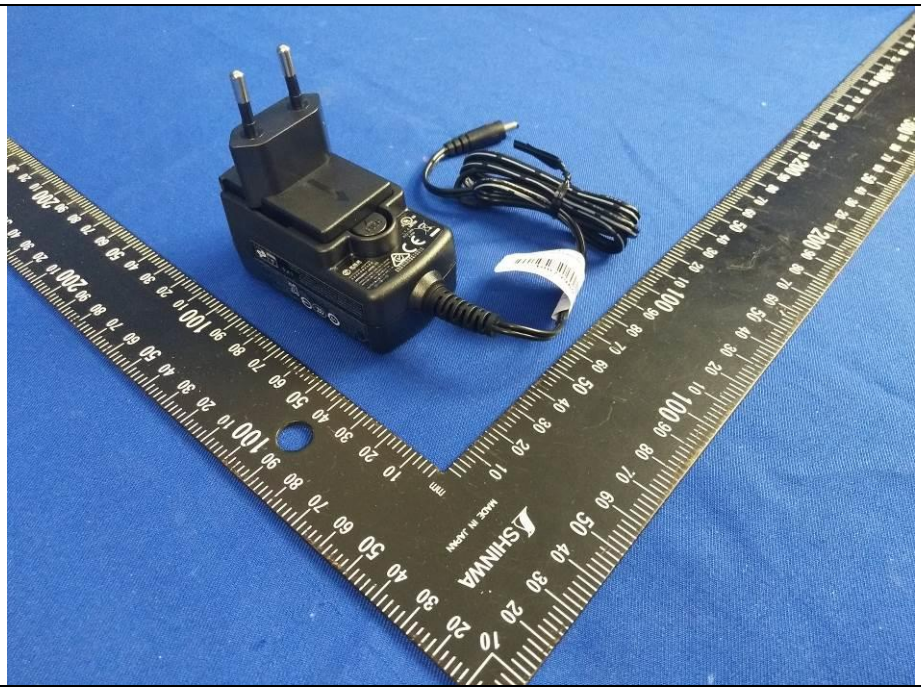
Details of: Stepping motor



Details of: Lithium Battery



Details of: External power supply



Details of: External power supply

Details of: External power supply

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

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

Attachment 2 EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES

ATTACHMENT 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

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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”		P
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		P
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		P
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		P

IEC60950_1F - ATTACHMENT			
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: 2.7.1 Note * 2.10.3.1 Note 2 6.2.2. Note * Note of secretary: Text of Common Modification remains unchanged.		P
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.		N/A
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.	No headphone and earphone.	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		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 *		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.	No headphone and earphone.	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.		N/A

IEC60950_1F - ATTACHMENT			
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.		N/A

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
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.		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		N/A

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
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.		N/A

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
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.		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.		N/A

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	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.		N/A
	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.		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.		N/A

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
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;	Class III equipment.	N/A
	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.		N/A
2.7.2	This subclause has been declared ‘void’.		—
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.		N/A

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
3.2.5.1 (A2:2013)	NOTE Z1 The harmonised code designations corresponding to the IEC cord types are given in Annex ZD	Class III equipment.	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		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).		N/A
	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.		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.		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.		N/A

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
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.		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.		N/A

IEC60950_1F - ATTACHMENT			
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”	Class III equipment.	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).”		

IEC60950_1F - ATTACHMENT			
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.”		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.		N/A

IEC60950_1F - ATTACHMENT			
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		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.		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.		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.		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.		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.		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		N/A

IEC60950_1F - ATTACHMENT			
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.		N/A

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
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		N/A
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.		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.		N/A

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
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.		N/A
3.2.4	In **Switzerland**, for requirements see 3.2.1.1 of this annex.		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.		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.		N/A
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.		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.		N/A

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
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.		N/A
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.		N/A

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	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.		N/A
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.		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

IEC60950_1F - ATTACHMENT			
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

*******End of Attachment 2*******