TEST REPORT

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

Report Number. ..... :	**140523004SZN-001**
Date of issue ..... :	Jun. 18, 2014
Total number of pages ..... :	Refer to page 4 for details
CB Testing Laboratory ..... :	**Intertek Testing Services Shenzhen Ltd. Kejiyuan Branch**
Address ..... :	6F, D Block, Huahan Building, Langshan Road, Nanshan District, Shenzhen, P. R. China
Applicant's name ..... :	**I.R.I.S.S.A**
Address ..... :	Rue Du Bosquet 10, 1348 Louvain-La-Neuve, Belgium
Manufacturer's name ..... :	**SKY LIGHT Electronic (Shenzhen) Limited**
Address ..... :	No. 6 Building, JinBi Industrial Area, HuangTian, BaoAn, Shenzhen, China
Test specification:	
Standard..... :	IEC 60950-1:2005 (Second Edition) + Am 1:2009
	& EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011
Test procedure ..... :	R and TTE article 3.1a
Non-standard test method…….. :	N/A
Test Report Form No. ..... :	IEC60950_1C
Test Report Form(s) Originator..... :	SGS Fimko Ltd
Master TRF ..... :	Dated 2012-08

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

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

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Test item description ..... :	**Motorized Auto-feeding Portable Scanner**
Trade Mark .....:	IRIS
Manufacturer .....:	Refer to Page 1 for details
Model/Type reference .....:	IRIScan™ Anywhere 3 Wifi
Ratings .....:	For internal Li polymer battery: 3.7V⎓, 1200mAh or powered by USB port

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Testing procedure and testing location:		
☒ **CB Testing Laboratory**:	Intertek Testing Services Shenzhen Ltd. Kejiyuan Branch	
Testing location/ address .....:	6F, D Block, Huahan Building, Langshan Road, Nanshan District, Shenzhen, P. R. China	
☐ **Associated CB Laboratory:**		
Testing location/ address .....:		
Tested by (name + signature) .....:	Kitty Li	***Signature on file***
Approved by (+ signature).....:	Frank Li	Digitally signed by Frank Li Location: Intertek Testing Services
☐ Testing procedure: TMP		
Tested by (name + signature) .....:		
Approved by (+ signature).....:		
Testing location/ address .....:		
☐ Testing procedure: WMT		
Tested by (name + signature) .....:		
Witnessed by (+ signature) .....:		
Approved by (+ signature).....:		
Testing location/ address .....:		
☐ Testing procedure: SMT		
Tested by (name + signature) .....:		
Approved by (+ signature).....:		
Supervised by (+ signature) .....:		
Testing location/ address .....:		
☐ Testing procedure: RMT		
Tested by (name + signature) .....:		
Approved by (+ signature).....:		
Supervised by (+ signature) .....:		
Testing location/ address .....:		

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

- Main test report (47 pages)

- Appendix 1 (19 pages)_ EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES for EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011

- Appendix 2 (6 pages)_Product photos

Summary of testing:

The sample(s) tested complies with the requirements of the following: IEC 60950-1:2005 (Second Edition) + Am 1:2009 and EN 60950-1: 2006 + A11: 2009 + A1: 2010 + A12: 2011

Tests performed (name of test and test clause):		**Testing location:**
1.6.2	Input Test	6F, D Block, Huahan Building, Langshan Road, Nanshan District, Shenzhen, P. R. China
1.7.11	Marking Durability Test	
2.1.1.5	Energy Hazard Test	
2.5	Limited Power Sources test	
4.3.8	Batteries	
4.5.2	Temperature test	
5.3	Abnormal operating and fault conditions test	

Summary of compliance with National Differences:

IEC standard has been compared with the EN standard, EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES of all CENELEC members have been considered.

☒ The product fulfils the requirements of EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011

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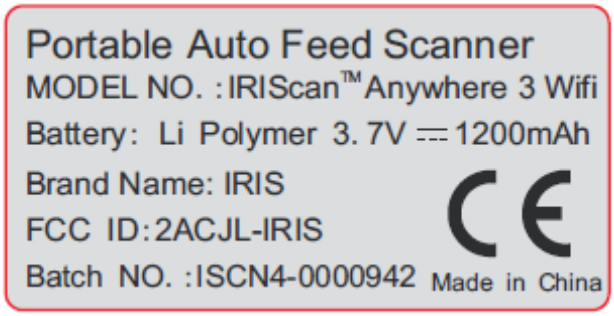
Copy of marking plate :



Marking for EUT

- The above markings are the minimum requirements required by the safety standard. For the final production, the additional markings which do not give rise to misunderstanding may be added.
- The height of CE and WEEE symbol should be minimum 5.0 mm and 7.0 mm and in correct ratio respectively.

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Test item particulars ..... :	
Equipment mobility ..... :	[] movable [] hand-held [x] transportable [] 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 mains for the scanner
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] other: Not directly connected to mains for the scanner
Mains supply tolerance (%) or absolute mains supply values ..... :	Not directly connected to mains for the scanner
Tested for IT power systems ..... :	[] Yes [x] No
IT testing, phase-phase voltage (V) ..... :	N/A
Class of equipment ..... :	[] Class I [] Class II [x] Class III [] Not classified
Considered current rating (A) ..... :	N/A
Pollution degree (PD) ..... :	[] PD 1 [x] PD 2 [] PD 3
IP protection class ..... :	IPX0
Altitude during operation (m) ..... :	< 2000 m
Altitude of test laboratory (m) ..... :	< 2000 m
Mass of equipment (kg) ..... :	Approx. 0.33 for the scanner
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 ..... :	May 23, 2014
Date(s) of performance of tests ..... :	May 23, 2014 – Jun. 06, 2014

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General remarks:

The test results presented in this report relate only to the object tested.
This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.
"(see Enclosure #)" refers to additional information appended to the report.
"(see appended table)" refers to a table appended to the report.
Note: This TRF includes EN Group Differences together with National Differences and Special National Conditions, if any. All Differences are located in the Appendix to the main body of this TRF.
Throughout this report a ☐ comma / ☒ point is used as the decimal separator.

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

This report is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this report. Only the Client is authorized to permit copying or distribution of this report and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test results in this report are relevant only to the sample tested. This report by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program. The test report only allows to be revised only within the report defined retention period unless standard or regulation was withdrawn or invalid.

Remark:

The report was based on previous report 131224018SZN-001, issued on Apr. 01, 2014, due to amendment as following:

- Changing Applicant's name & address, product name, model no. and brand name

	Applicant		Product name	Model no.
Original	Name	Sky Light Imaging Limited	Portable Auto Feed Scanner	TSN48W, TSN480, TSN49W, TSN490
	Address	Rm. 1009 Kwong Sang Hong Centre, 151-153 Hoi Bun Road, Kwun Tong, Kowloon, Hongkong		
Current	Name	I.R.I.S.S.A	Motorized Auto-feeding Portable Scanner	IRIScan™ Anywhere 3 Wifi
	Address	Rue Du Bosquet 10, 1348 Louvain-La-Neuve, Belgium		

- Removing the external adapter from table 1.5.1

Base on above information, Relative clause 1.6.2 had been considered and complied with the requirements of standard.

The test computer model is HP Compaq 6200 pro SFF PC.

Manufacturer's Declaration per sub-clause 6.2.5 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.

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Name and address of factory (ies) ..... :	Name: SKY LIGHT Electronic (Shenzhen) Limited Add.: No. 6 Building, JinBi Industrial Area, HuangTian, BaoAn, Shenzhen, China

General product information:

The product covered in this report is a Motorized Auto-feeding Portable Scanner powered by internal rechargeable battery or USB port

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)

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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 or relevant component standard	(see appended table 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		N/A
1.5.6	Capacitors bridging insulation	No such device within the scanner	N/A
1.5.7	Resistors bridging insulation	No such device within the scanner	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	No such device within the scanner	N/A
1.5.9	Surge suppressors	No such device within the scanner	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	Not directly connected to AC mains for the scanner	N/A
1.6.2	Input current	(see appended table 1.6.2)	P
1.6.3	Voltage limit of hand-held equipment	Not hand-held equipment	N/A

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.6.4	Neutral conductor		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.....:	Not directly connected to mains for the scanner	N/A
	Rated voltage(s) or voltage range(s) (V) ..... :	Refer to page 2 & 5 for details	P
	Symbol for nature of supply, for d.c. only ..... :	Refer to page 2 & 5 for details	P
	Rated frequency or rated frequency range (Hz) ... :		N/A
	Rated current (mA or A) ..... :	Refer to page 2 & 5 for details	P
1.7.1.2	Identification markings		P
	Manufacturer's name or trade-mark or identification mark ..... :	Refer to page 2 & 5 for details	P
	Model identification or type reference ..... :	Refer to page 2 & 5 for details	P
	Symbol for Class II equipment only ..... :	Class III equipment for the scanner	N/A
	Other markings and symbols ..... :	Additional symbols shall not give misunderstanding	P
1.7.2	Safety instructions and marking	Mentioned in user's manual	P
1.7.2.1	General		P
1.7.2.2	Disconnect devices	Not directly connected to AC mains for the scanner	N/A
1.7.2.3	Overcurrent protective device	No such device within the scanner	N/A
1.7.2.4	IT power distribution systems		N/A
1.7.2.5	Operator access with a tool	No such access	N/A
1.7.2.6	Ozone	No ozone produced by the EUT	N/A
1.7.3	Short duty cycles	The equipment designed for continual operation	N/A
1.7.4	Supply voltage adjustment ..... :	No such device within the EUT	N/A
	Methods and means of adjustment; reference to installation instructions ..... :		N/A
1.7.5	Power outlets on the equipment ..... :		N/A

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.6	Fuse identification (marking, special fusing characteristics, cross-reference) ..... :	No fuse within the scanner	N/A
1.7.7	Wiring terminals		N/A
1.7.7.1	Protective 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	Only used for function display	P
1.7.8.1	Identification, location and marking ..... :		P
1.7.8.2	Colours ..... :		P
1.7.8.3	Symbols according to IEC 60417 ..... :	"STAND-BY" condition was indicated by the symbol ⏻	P
1.7.8.4	Markings using figures ..... :		N/A
1.7.9	Isolation of multiple power sources ..... :		N/A
1.7.10	Thermostats and other regulating devices ..... :	No such device used	N/A
1.7.11	Durability		P
1.7.12	Removable parts	No such parts within the EUT	N/A
1.7.13	Replaceable batteries ..... :	No replaceable batteries used within the EUT	N/A
	Language(s) .....:		—
1.7.14	Equipment for restricted access locations..... :		N/A

2	PROTECTION FROM HAZARDS		P
2.1	Protection from electric shock and energy hazards		P
2.1.1	Protection in operator access areas		P
2.1.1.1	Access to energized parts	No such part within the scanner	N/A
	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 within the EUT	N/A
2.1.1.2	Battery compartments	No TNV circuit in battery compartment within the EUT	N/A
2.1.1.3	Access to ELV wiring	No ELV wiring used within the EUT	N/A

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Working voltage (Vpeak or Vrms); minimum distance through insulation (mm)		—
2.1.1.4	Access to hazardous voltage circuit wiring	No such wiring	N/A
2.1.1.5	Energy hazards ..... :	Battery pack was considered; refer to table 2.1.1.5 for details.	P
2.1.1.6	Manual controls		N/A
2.1.1.7	Discharge of capacitors in equipment	No such capacitors within the scanner	N/A
	Measured voltage (V); time-constant (s) ..... :		—
2.1.1.8	Energy hazards – 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 ..... :	No audio amplifier	N/A
2.1.2	Protection in service access areas	No bare part at hazardous voltage or presenting hazrdous energy level in the scanner	P
2.1.3	Protection in restricted access locations	No such locations	N/A

2.2	**SELV circuits**		**P**
2.2.1	General requirements	Powered by SELV for the scanner	P
2.2.2	Voltages under normal conditions (V) ..... :		N/A
2.2.3	Voltages under fault conditions (V) ..... :		N/A
2.2.4	Connection of SELV circuits to other circuits ..... :	SELV to SELV only	P

2.3	**TNV circuits**		**N/A**
2.3.1	Limits	No TNV circuit within the EUT	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

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
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 such circuits within the scanner	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**		**P**
	a) Inherently limited output		N/A
	b) Impedance limited output		N/A
	c) Regulating network limited output under normal operating and single fault condition		P
	d) Overcurrent protective device limited output		N/A
	Max. output voltage (V), max. output current (A), max. apparent power (VA) .....:	The battery in the scanner was considered, refer to table 2.5 for details.	—
	Current rating of overcurrent protective device (A)		—
	Use of integrated circuit (IC) current limiters		—
2.6	**Provisions for earthing and bonding**		**N/A**
2.6.1	Protective earthing	This scanner is considered as Class III equipment	N/A
2.6.2	Functional earthing		N/A

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

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Clause	Requirement + Test	Result - Remark	Verdict
2.7.1	Basic requirements	No primary circuit within the sannner.	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 interlocks used within the EUT	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		
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**		**N/A**
2.9.1	Properties of insulating materials	Class III equipment for the scanner	N/A
2.9.2	Humidity conditioning		N/A
	Relative humidity (%), temperature (°C) .....:		—
2.9.3	Grade of insulation		N/A
2.9.4	Separation from hazardous voltages		N/A
	Method(s) used .....:		—

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

2.10	**Clearances, creepage distances and distances through insulation**		**N/A**
2.10.1	General	Class III equipment for the scanner	N/A
2.10.1.1	Frequency .....:		N/A
2.10.1.2	Pollution degrees .....:		N/A
2.10.1.3	Reduced values for functional insualtion		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		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		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
	For a d.c. mains supply .....:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	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 caomparative 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		—
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, supplemetary, reinforced insulation .....:		N/A
	c) Compliance with Annex U .....:		N/A
	Two wires in contact inside wound component; angle between 45° and 90° .....:		N/A
2.10.5.13	Wire with solvent-based enamel in wound components		N/A
	Electric strength test		—
	Routine test		N/A
2.10.5.14	Additional insulation in wound components		N/A
	Working voltage .....:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- Basic insulation not under stress .....:		N/A
	- Supplemetary, reinforced insulation .....:		N/A
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	Wireways are smooth and free from edges. Wires are adequately fixed to prevent excessive strain on wire and terminals and avoiding damage to the insulation of the conductors.	P

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Clause	Requirement + Test	Result - Remark	Verdict
3.1.3	Securing of internal wiring	Internal wiring is secured against excessive strain, loosening of terminals and damage to the conductor insulation.	P
3.1.4	Insulation of conductors	Insulation on internal conductors is considered to be of adequate quality and suitable for the application and the working voltage involved.	P
3.1.5	Beads and ceramic insulators	No beads or similar ceramic insulators on conductors.	N/A
3.1.6	Screws for electrical contact pressure	No such screws used within the EUT.	N/A
3.1.7	Insulating materials in electrical connections		N/A
3.1.8	Self-tapping and spaced thread screws	No such screws used within the EUT.	N/A
3.1.9	Termination of conductors		N/A
	10 N pull test		N/A
3.1.10	Sleeving on wiring	No such sleeving used within the scanner.	N/A
3.2	**Connection to a mains supply**		**N/A**
3.2.1	Means of connection	Not directly connected to mains for the scanner.	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 ..... :		—

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Clause	Requirement + Test	Result - Remark	Verdict
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	Not a permanently connected equipment or equipment with ordinary non-detachable power supply cords for the EUT	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
3.3.8	Stranded wire		N/A
3.4	**Disconnection from the mains supply**		**N/A**
3.4.1	General requirement	Not directly connnected to the mains for the scanner.	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

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Clause	Requirement + Test	Result - Remark	Verdict
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		P
3.5.2	Types of interconnection circuits ..... :	SELV circuits	P
3.5.3	ELV circuits as interconnection circuits	No ELV circuits	N/A
3.5.4	Data ports for additional equipment	USB port are only for data transmitting and no supply function is provided	P
4	**PHYSICAL REQUIREMENTS**		**P**
4.1	**Stability**		**N/A**
	Angle of 10°	< 7kg	N/A
	Test force (N) .....:		N/A
4.2	**Mechanical strength**		**N/A**
4.2.1	General		N/A
4.2.2	Steady force test, 10 N		N/A
4.2.3	Steady force test, 30 N		N/A
4.2.4	Steady force test, 250 N		N/A
4.2.5	Impact test		N/A
	Fall test		N/A
	Swing test		N/A
4.2.6	Drop test; height (mm) .....:		N/A
4.2.7	Stress relief test		N/A
4.2.8	Cathode ray tubes		N/A
	Picture tube separately certified .....:		N/A
4.2.9	High pressure lamps		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
4.2.10	Wall or ceiling mounted equipment; force (N) .....:		N/A
4.2.11	Rotating solid media		N/A
	Test to cover on the door……..:		N/A
4.3	**Design and construction**		**P**
4.3.1	Edges and corners	Edges and corners are rounded and smoothed	P
4.3.2	Handles and manual controls; force (N) ..... :	No such device within the equipment	N/A
4.3.3	Adjustable controls	No such controls within the equipment	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		N/A
	Torque .....:		—
	Compliance with the relevant mains plug standard .....:		N/A
4.3.7	Heating elements in earthed equipment	No such device within the EUT	N/A
4.3.8	Batteries	Refer to table 4.3.8 for details	P
	- Overcharging of a rechargeable battery		P
	- Unintentional charging of a non-rechargeable battery		N/A
	- Reverse charging of a rechargeable battery	Impossible reverse	P
	- Excessive discharging rate for any battery		P
4.3.9	Oil and grease		N/A
4.3.10	Dust, powders, liquids and gases	No such materials produced by the EUT	N/A
4.3.11	Containers for liquids or gases	Not contain such materials within the EUT	N/A
4.3.12	Flammable liquids .....:	No such liquid within the EUT	N/A
	Quantity of liquid (l) .....:		N/A
	Flash point (°C) .....:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
4.3.13	Radiation	Low power application of LED used only for scanning (input votage: 3.3V) and indication	P
4.3.13.1	General		P
4.3.13.2	Ionizing radiation		N/A
	Measured radiation (PA/kg) .....:		—
	Measured high-voltage (kV) .....:		—
	Measured focus voltage (kV) .....:		—
	CRT markings .....:		—
4.3.13.3	Effect of ultraviolet (UV) radiation on materials	No UV radiation within EUT	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	Only LED used	P
4.3.13.5.1	Lasers (including laser laser diodes)		N/A
	Laser class .....:		—
4.3.13.5.2	Light emitting diodes (LEDs)	All LEDs for functional indication or scanning (input votage: 3.3V) as low power application	P
4.3.13.6	Other types .....:		N/A

4.4	**Protection against hazardous moving parts**		**N/A**
4.4.1	General	No hazardous moving parts	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

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Clause	Requirement + Test	Result - Remark	Verdict
	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 .....:	Operated with max. load	—
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
4.6	**Openings in enclosures**		**P**
4.6.1	Top and side openings	No openings on the enclosure	P
	Dimensions (mm) .....:		—
4.6.2	Bottoms of fire enclosures	No fire enclosure needed for the scanner	N/A
	Construction of the bottomm, dimensions (mm) ..:		—
4.6.3	Doors or covers in fire enclosures		N/A
4.6.4	Openings in transportable equipment		P
4.6.4.1	Constructional design measures	No openings on the enclosure	P
	Dimensions (mm) .....:		—
4.6.4.2	Evaluation measures for larger openings		N/A
4.6.4.3	Use of metallized parts	No such metallized parts used	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	Considered within the battery cell used in the scanner	P
4.7.2	Conditions for a fire enclosure		N/A
4.7.2.1	Parts requiring a fire enclosure		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
4.7.2.2	Parts not requiring a fire enclosure	See below: - motors; - connectors in secondary circuits supplied by limited power sources complying with 2.5; – other components in secondary circuits, supplied by limited power sources complying with 2.5 and mounted on v-1 class material; - approved battery cell used, refer to appended table 1.5.1 for details.	P
4.7.3	Materials	(see appended table 1.5.1)	P
4.7.3.1	General		P
4.7.3.2	Materials for fire enclosures		N/A
4.7.3.3	Materials for components and other parts outside fire enclosures	Components mounted on V-1 material	P
4.7.3.4	Materials for components and other parts inside fire enclosures	V-1 or better PCB used. All components except small parts are V-2 or better	P
4.7.3.5	Materials for air filter assemblies	No air filter assemblies	N/A
4.7.3.6	Materials used in high-voltage components	No such components	N/A

5	**ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS**		**P**
5.1	**Touch current and protective conductor current**		**N/A**
5.1.1	General		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

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Clause	Requirement + Test	Result - Remark	Verdict
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) ..... :		—
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	DC motor used, refer to Annex B for details	P
5.3.3	Transformers	No transformer within the scanner	N/A
5.3.4	Functional insulation ..... :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.3.5	Electromechanical components	No such components	N/A
5.3.6	Audio amplifiers in ITE ..... :	No such device within the EUT	N/A
5.3.7	Simulation of faults	(see appended table 5.3)	P
5.3.8	Unattended equipment		P
5.3.9	Compliance criteria for abnormal operating and fault conditions	(see appended table 5.3)	P
5.3.9.1	During the tests	(see appended table 5.3)	P
5.3.9.2	After the tests	(see appended table 5.3)	P
6	**CONNECTION TO TELECOMMUNICATION NETWORKS**		**N/A**
6.1	**Protection of telecommunication network service persons, and users of other equipment connected to the network, from hazards in the equipment**		**N/A**
6.1.1	Protection from hazardous voltages		N/A
6.1.2	Separation of the telecommunication network from earth		N/A
6.1.2.1	Requirements		N/A
	Supply voltage (V) .....:		—
	Current in the test circuit (mA) .....:		—
6.1.2.2	Exclusions .....:		N/A
6.2	**Protection of equipment users from overvoltages on telecommunication networks**		**N/A**
6.2.1	Separation requirements		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

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

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
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)**		**P**
B.1	General requirements	DC stepper motor used in secondary circuits	P
	Position .....:	Within the scanner	—
	Manufacturer .....:	Refer to appended table 1.5.1	—
	Type .....:	Refer to appended table 1.5.1	—
	Rated values .....:	Refer to appended table 1.5.1	—
B.2	Test conditions		N/A
B.3	Maximum temperatures		N/A
B.4	Running overload test		N/A
B.5	Locked-rotor overload test		N/A
	Test duration (days) .....:		—
	Electric strength test: test voltage (V) .....:		—
B.6	Running overload test for d.c. motors in secondary circuits		N/A
B.6.1	General		N/A
B.6.2	Test procedure		N/A
B.6.3	Alternative test procedure		N/A
B.6.4	Electric strength test; test voltage (V) .....:		N/A

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
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	Not series motors used	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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IEC 60950-1			
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

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Clause	Requirement + Test	Result - Remark	Verdict
K.4	Temperature limiter endurance; operating voltage (V) .....:		N/A
K.5	Thermal cut-out reliability		N/A
K.6	Stability of operation		N/A
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

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Clause	Requirement + Test	Result - Remark	Verdict
P	**ANNEX P, NORMATIVE REFERENCES**		—
Q	**ANNEX Q, Voltage dependent resistors (VDRs) (see 1.5.9.1)**		**N/A**
	a) Preferred climatic categories .....:		N/A
	b) Maximum continuous voltage .....:		N/A
	c) Pulse current .....:		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

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
W.2.3	Common return, connected to protective earth		N/A
X	**ANNEX X, MAXIMUM HEATING EFFECT IN TRANSFORMER TESTS (see clause C.1)**		**N/A**
X.1	Determination of maximum input current		N/A
X.2	Overload test procedure		N/A
Y	**ANNEX Y, ULTRAVIOLET LIGHT CONDITIONING TEST (see 4.3.13.3)**		**N/A**
Y.1	Test apparatus .....:		N/A
Y.2	Mounting of test samples .....:		N/A
Y.3	Carbon-arc light-exposure apparatus .....:		N/A
Y.4	Xenon-arc light exposure apparatus .....:		N/A
Z	**ANNEX Z, OVERVOLTAGE CATEGORIES (see 2.10.3.2 and Clause G.2)**		**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
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

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Clause	Requirement + Test	Result - Remark	Verdict
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
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

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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])
Li-ion Polymer Battery Pack	Springpower Technology (Shenzhen) Company Limited	LK997	3.7Vdc, 1200mAh	Applicable parts of EN 60950-1	Tested with appliance
- Battery cell	Springpower Technology (Shenzhen) Company Limited	602278	Lithium ion, 3.7Vdc, 1200mAh, Max. Charging Current: 1.2A; Max. Charging Voltage: 4.2Vdc	IEC 62133	Test report with no. SZES14030 0043501 by SGS
LCD Module	Shenzhen Tongxingda Technology Co., Ltd.	TXDT144TF-19V9	26.1mm x 27.1 mm, Resolution: 128*128, TFT, Transmissive	Applicable parts of EN 60950-1	Tested with appliance
DC stepper motor	Shen Zhen City Once Top Motor Manufacture Co., Ltd.	OT-SM15P-304	5Vdc, 250mA, Step angle: 18°.	Applicable parts of EN 60950-1	Tested with appliance
LED for scanning	Interchangeable	PX-8435C	3.3V, 60mA max.	Applicable parts of EN 60950-1	Tested with appliance
Plastic material of enclosure	BAYER MATERIALSCIENCE AG	2405 + (z)	115°C, HB, thickness 2.0mm	Applicable parts of EN 60950-1	UL E41613
PCB	SHEN ZHEN SUN & LYNN CIRCUITS CO LTD	SL-4M	130°C, V-0	Applicable parts of EN 60950-1	UL E234156
PCB (Alternative)	Interchangeable	Interchangeable	130°C, Min V-1	Applicable parts of EN 60950-1	UL, ETL or other EU certificate
1) An asterisk indicates a mark which assures the agreed level of surveillance 2) The “Interchangeable“means any type from any manufacturer that complies with the specification can be used.					

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

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 ..... : Output ..... :		
Supplementary information		

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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
Fully charged battery	--	--	3.268	--	--	Powered by fully charged battery only with maxmium normal load. Discharging current of battery is Max. 0.778A.
5.5	0.448	1.0	2.464	--	--	DC source supply for battery charging and maximum normal load. Charging current: 0.2A
5.5	0.975	1.0	5.363	--	--	DC source supply only for battery charging Charging current: 0.84A
5.0	0.447	--	2.235	--	--	5V USB supply for battery charging and maximum normal load. Charging current: 0.198A
5.0	0.973	--	4.865	--	--	5V USB supply only for battery charging Charging current: 0.838A
Supplementary information:						

2.1.1.5 c) 1)	TABLE: max. V, A, VA test				P
Voltage (rated) (V)	Current (rated) (A)	Voltage (max.) (V)	Current (max.) (A)	VA (max.) (VA)	
3.7V for output terminal of battery package	--	4.20	2.10	7.65	
Supplementary information:					

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

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

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:			

2.5	TABLE: Limited power sources					P
Circuit output tested: output terminal of battery package						
Note: Measured Uoc (V) with all load circuits disconnected						
Components	Sample No.	Uoc (V)	I_{sc} (A)		VA	
			Meas.	Limit	Meas.	Limit
Battery Package	--	4.20	2.10	8	7.65	100
Battery Package(short circuit of pin2&6 of U2 in battery protection PCB)	--	4.20	2.13	8	7.69	100
Supplementary information:						

2.10.2	Table: working voltage measurement		N/A
Location	RMS voltage (V)	Peak voltage (V)	Comments
Supplementary information:			

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

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)
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)
Thin sheet material at/of:	U peak (V)	U rms (V)	Test voltage (V)	required layers	Layers
Supplementary information:					

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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		Yes	P
Is it possible to install the battery in a reverse polarity position?		Impossible	P

	Non-rechargeable batteries			Rechargeable batteries					
	Discharging		Un-intentional charging	Charging		Discharging		Reversed charging	
	Meas. current	Manuf. Specs.		Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.
Max. current during normal condition	--	--	--	0.98 A	1.2 A	0.78 A	1.2 A	--	--
Max. current during fault condition	--	--	--	1.35 A (Pin 1 & pin 10 of U7/SC)	--	0.95 A (Pin 2 & pin 3 of Q1/SC)	--	--	--

Test results:		Verdict
- Chemical leaks		P
- Explosion of the battery		P
- Emission of flame or expulsion of molten metal		P
- Electric strength tests of equipment after completion of tests		N/A
Supplementary information:		
- SC: Short-circuited		

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

4.3.8	TABLE: Batteries	P

Battery category ..... : Li-ion polymer Battery

Manufacturer ..... : Refer to table 1.5.1 for details

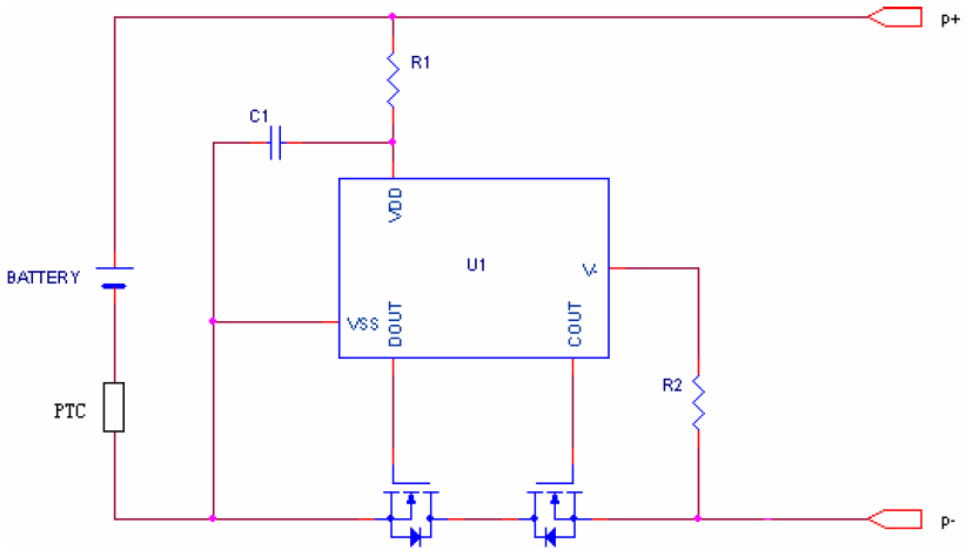
Type / model..... : LK997 (battery cell: 602278)

Voltage ..... : 3.7Vdc

Capacity ..... : 1200mAh

Tested and Certified by (incl. Ref. No.)..... : Tested by SGS for battery pack with report no. SZES140300043501

Circuit protection diagram:



MARKINGS AND INSTRUCTIONS (1.7.12, 1.7.15)

Location of replaceable battery N/A

Language(s) ……..: N/A

Close to the battery ……..: N/A

In the servicing instructions ……: N/A

In the operating instructions ……..: N/A

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

4.5	TABLE: Thermal requirements			P
	Supply voltage (V) ..... :	5.5V (Charging while working)	Fully charged battery	—
	Ambient T_{min} (°C) ..... :	25	25	—
	Ambient T_{max} (°C) ..... :	25	25	—
Maximum measured temperature T of part/at:		T (°C)		Allowed T_{max} (°C)
C129 body		69	55	For referance
PCB surface near Q8		57	40	105
PCB surface near U12		45	37	105
PCB surface near U7		84	44	105
PCB surface near U9		50	43	105
PCB surface near U10		42	37	105
PCB surface near main IC (on Wi-Fi board)		60	59	105
Internal enclosure near power PCB		39	34	For referance
Winding of DC motor		88	76	130
Internal enclosure near under battery		33	35	For referance
External enclosure near battery		32	33	75
Battery body		34	37	For referance
External enclosure near USB port		53	42	75
Surface of panel		35	34	75
External enclosure near power PCB		43	32	75

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:

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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:

- See table 1.5.1

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	
--	--	--	--	

Supplementary information:

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

5.3	TABLE: Fault condition tests		P
	Ambient temperature (°C) .....:	25°C	—
	Power source for EUT: Manufacturer, model/type, output rating .....:	Refer to page 2 for details	—

Component No.	Fault	Supply voltage (V)	Test time	Fuse #	Fuse current (A)	Observation
Battery	OVC	5.5Vdc	7hrs	--	--	No chemical leaks reducing insulation, no explosion of battery causing injury to user, no emission of flame or expulsion of molten metal outside enclosure. Finally, the EUT was similar with normal. No hazards Charging current of battery: 0.84A
Pin2 & Pin6 of U2 on the Battery PCB	SC	5.5Vdc	7hrs	--	--	No chemical leaks reducing insulation, no explosion of battery causing injury to user, no emission of flame or expulsion of molten metal outside enclosure. Finally, the EUT got the steady state. No hazards Charging current of battery: 0.85A
Pin2 & Pin3 of Q3	SC	5.5Vdc	7hrs	--	--	No chemical leaks reducing insulation, no explosion of battery causing injury to user, no emission of flame or expulsion of molten metal outside enclosure. Finally, the EUT got the steady state. No hazards Charging current of battery: 1.05A
Pin1 & Pin10 of U7	SC	5.5Vdc	7hrs	--	--	No chemical leaks reducing insulation, no explosion of battery causing injury to user, no emission of flame or expulsion of molten metal outside enclosure. Finally, the EUT got the steady state. No hazards Charging current of battery: 1.35A

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

Pin2 & Pin6 of U2 on the Battery PCB	SC	Fully charged	7hrs	--	--	No chemical leaks reducing insulation, no explosion of battery causing injury to user, no emission of flame or expulsion of molten metal outside enclosure. Finally, the EUT got the steady state. No hazards. Max. discharging current of battery: 0.78A
Pin2 & Pin3 of Q1	SC	Fully charged	7hrs	--	--	No chemical leaks reducing insulation, no explosion of battery causing injury to user, no emission of flame or expulsion of molten metal outside enclosure. Finally, the EUT got the steady state. No hazards. Charging current of battery: 0.95A
DC motor	LK	5.5Vdc	2hrs	--	--	Finally, the motor was protected. No hazards. Max. temperature of winding of motor is 78°C.
DC motor	LK	Fully charged	2hrs	--	--	Finally, the motor was protected. No hazards. Max. discharging current of battery: 0.84A.

Supplementary information:

1) **SC:** Short-circuited; **OC:** Open-circuited; **OL:** Over-load; **BK:** Block; **RP:** Reverse-polarity; **LK:** Lock; **DC:** Disconnect; **OVC:** Overcharging under Max. available charging voltage;

2) Observation: The observations during and after fault condition tests.

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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

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EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES			
Clause	Requirement + Test	Result - Remark	Verdict

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
Attachment Form No. .....:	EU_GD_IEC60950_1B_II
Attachment Originator.....:	SGS Fimko Ltd
Master Attachment.....:	Date 2011-08

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

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
Contents	Add the following annexes: Annex ZA (normative) Normative references to international publications with their corresponding European publications Annex ZB (normative) Special national conditions		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

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EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES			
Clause	Requirement + Test	Result - Remark	Verdict
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.		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	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		N/A
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.		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
	***Zx Protection against excessive sound pressure from personal music players**		N/A

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EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES			
Clause	Requirement + Test	Result - Remark	Verdict
	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

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EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES			
Clause	Requirement + Test	Result - Remark	Verdict
Cont'd	- 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 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.		N/A

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EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES			
Clause	Requirement + Test	Result - Remark	Verdict
Cont'd	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

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EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES			
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

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EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES			
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

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EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES			
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; 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’.		N/A
3.2.3	Delete the NOTE in Table 3A, and delete also in this table the conduit sizes in parentheses.		N/A

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EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES			
Clause	Requirement + Test	Result - Remark	Verdict
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
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). 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.		—

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EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES			
Clause	Requirement + Test	Result - Remark	Verdict

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	In **Norway** and **Sweden**, for requirements see 1.7.2.1 and 7.3 of this annex.		N/A
1.5.7.1	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

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EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES			
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” 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).”		N/A

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EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES			
Clause	Requirement + Test	Result - Remark	Verdict
Cont'd	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
1.7.5	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
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

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EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES			
Clause	Requirement + Test	Result - Remark	Verdict
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 SEV 6533-2.1991 Plug Type 11, L+N, 250 V, 10 A SEV 6534-2.1991 Plug Type 12, L+N+PE, 250V, 10A 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, 16 A SEV 5934-2.1998: Plug Type 23, L+N+PE, 250V, 16A		N/A

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EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES			
Clause	Requirement + Test	Result - Remark	Verdict
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
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

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EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES			
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

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EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES			
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

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EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES			
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	In **Norway** and **Sweden**, for requirements see 1.2.13.14 and 1.7.2.1 of this annex.		N/A
7.3	In **Norway**, for installation conditions see EN 60728-11:2005.		N/A

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EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 60950-1
EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES
Information technology equipment – Safety –
PART 1: GENERAL REQUIREMENTS

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

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
Contents	Add the following annexes: Annex ZC (informative) A-deviations		P

ZC	A-DEVIATIONS (informative)	N/A
1.5.1	**Sweden** (Ordinance 1990:944) Add the following: NOTE In Sweden, switches containing mercury are not permitted.	N/A
1.5.1	**Switzerland** (Ordinance on environmentally hazardous substances SR 814.081, Annex 1.7, Mercury - Annex 1.7 of SR 814.81 applies for mercury.) Add the following: NOTE In Switzerland, switches containing mercury such as thermostats, relays and level controllers are not allowed.	N/A
1.7.2.1	**Denmark** (Heavy Current Regulations) Supply cords of CLASS I EQUIPMENT, which is delivered without a plug, must be provided with a visible tag with the following text: Vigtigt! Lederen med grøn/gul isolation må kun tilsluttes en klemme mærket  eller  If essential for the safety of the equipment, the tag must in addition be provided with a diagram, which shows the connection of the other conductors, or be provided with the following text: “For tilslutning af de øvrige ledere, se medfølgende installationsvejledning.”	N/A

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EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.2.1	**Germany** (Gesetz über technische Arbeitsmittel und Verbraucherprodukte (Geräte- und Produktsicherheitsgesetz – GPSG) [Law on technical labour equipment and consumer products], of 6th January 2004, Section 2, Article 4, Clause (4), Item 2). If for the assurance of safety and health certain rules during use, amending or maintenance of a technical labour equipment or readymade consumer product are to be followed, a manual in German language has to be delivered when placing the product on the market. Of this requirement, rules for use even only by SERVICE PERSONS are not exempted.		N/A
1.7.5	**Denmark** (Heavy Current Regulations) With the exception of CLASS II EQUIPMENT provided with a socket outlet in accordance with the Heavy Current Regulations, Section 107-2-D1, Standard Sheet DK 1-4a, CLASS II EQUIPMENT shall not be fitted with socket-outlets for providing power to other equipment.		N/A
1.7.13	**Switzerland** (Ordinance on chemical hazardous risk reduction SR 814.81, Annex 2.15 Batteries) Annex 2.15 of SR 814.81 applies for batteries.		N/A
5.1.7.1	**Denmark** (Heavy Current Regulations, Chapter 707, clause 707.4) TOUCH CURRENT measurement results exceeding 3,5 mA r.m.s. are permitted only for PERMANENTLY CONNECTED EQUIPMENT and PLUGGABLE EQUIPMENT TYPE B.		N/A

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Overview of the EUT and accessories with Wi-Fi function

Side view of the EUT

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Rear view of the EUT

Internal View_1 of the EUT

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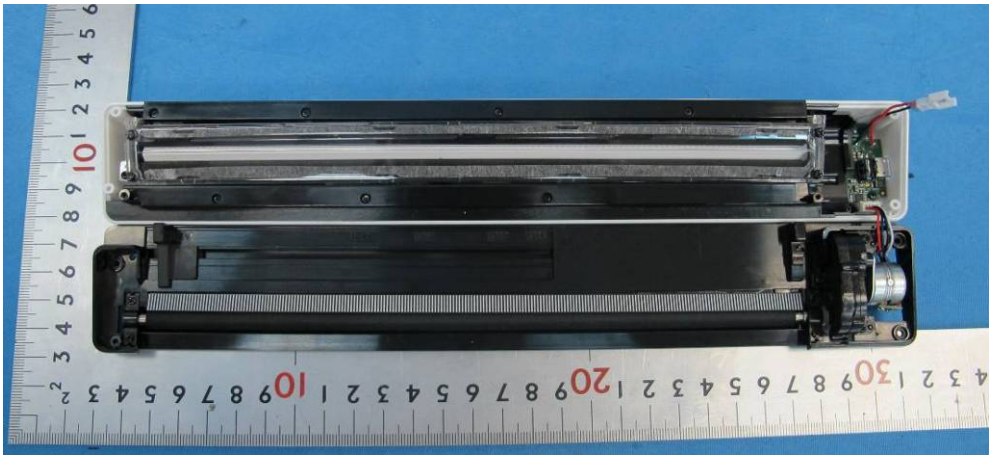
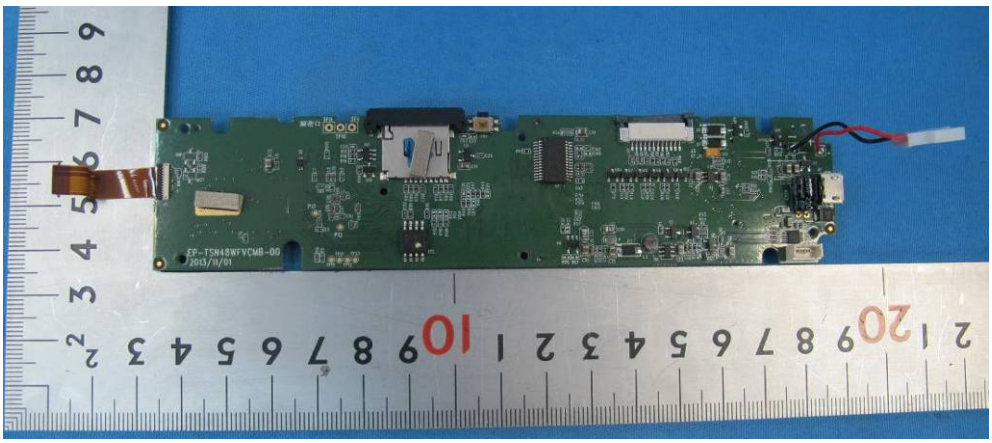


Internal View_2 of the EUT

Internal View_3 of the EUT



Bottom View of PCB

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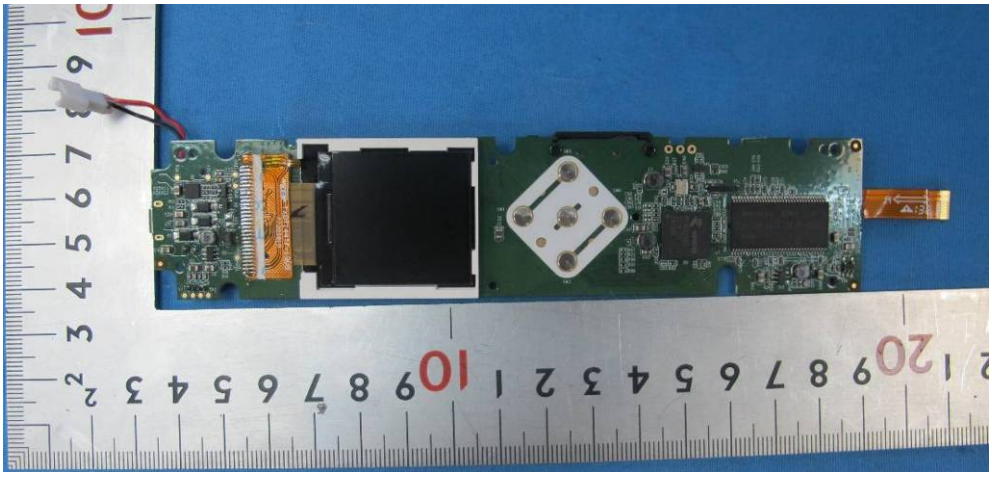
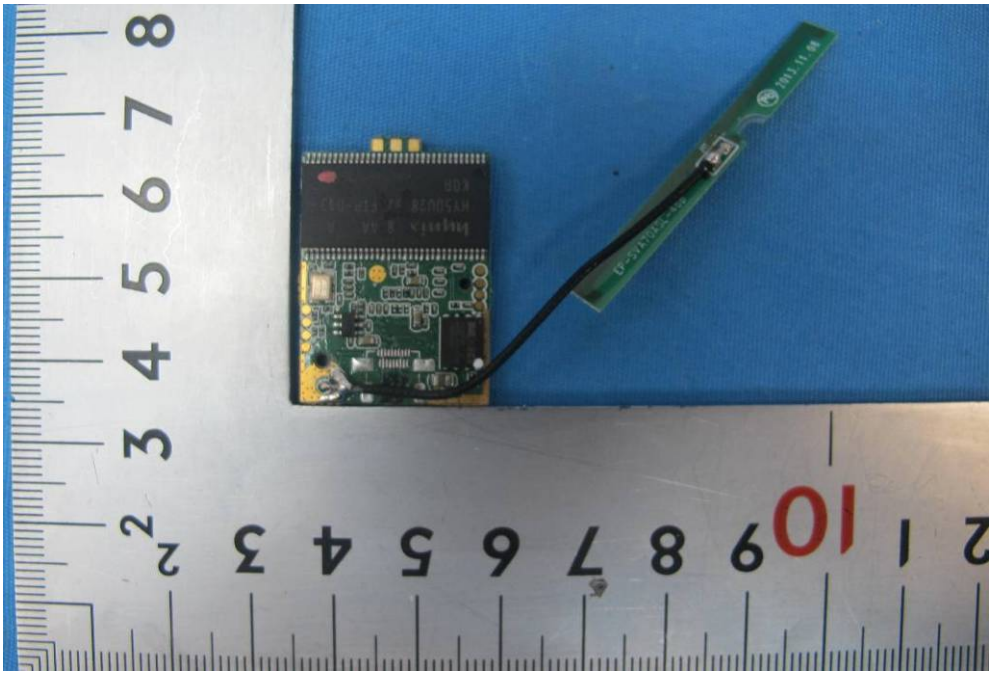


Top View of PCB



Top View of WiFi Module

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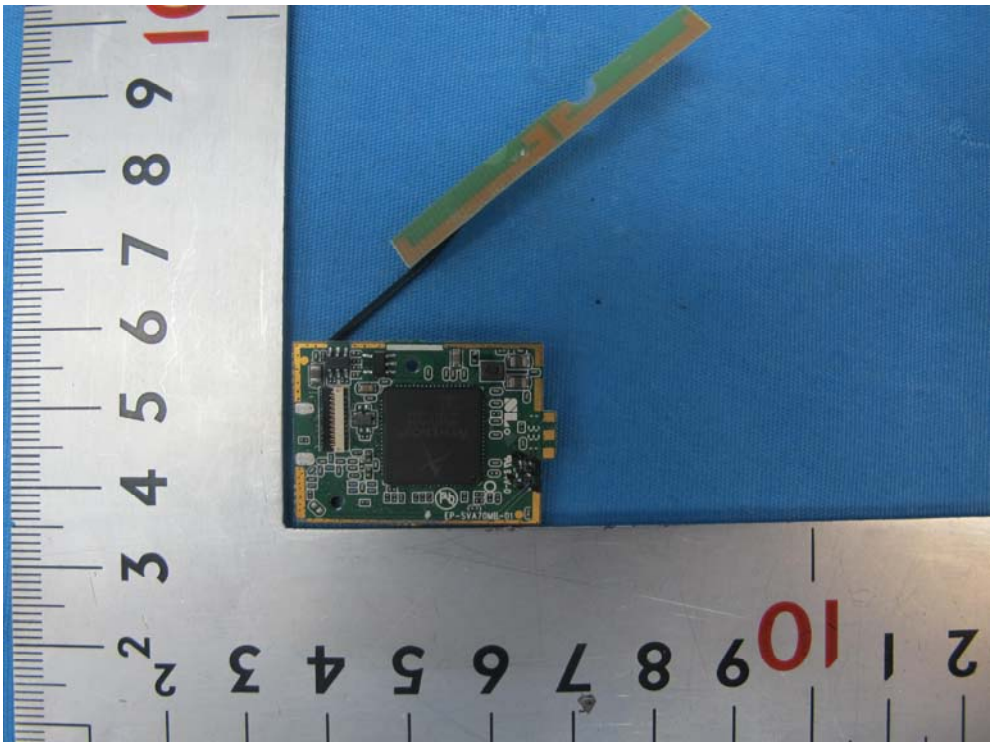
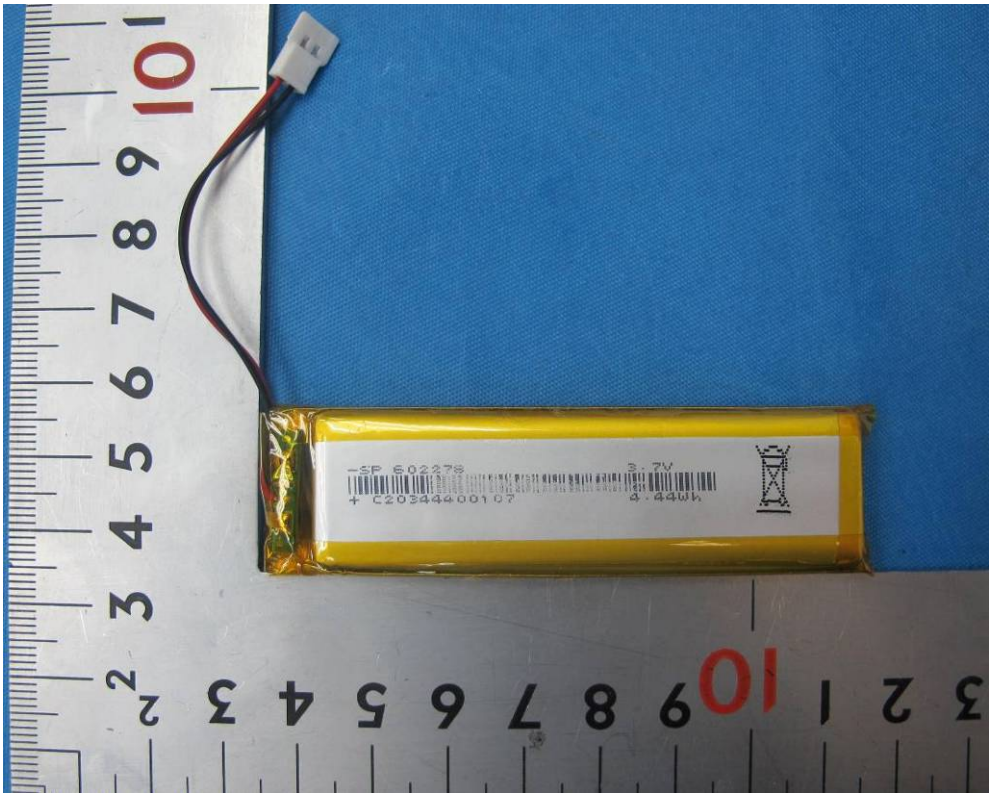


Bottom View of WiFi Module



Overall View of Battery

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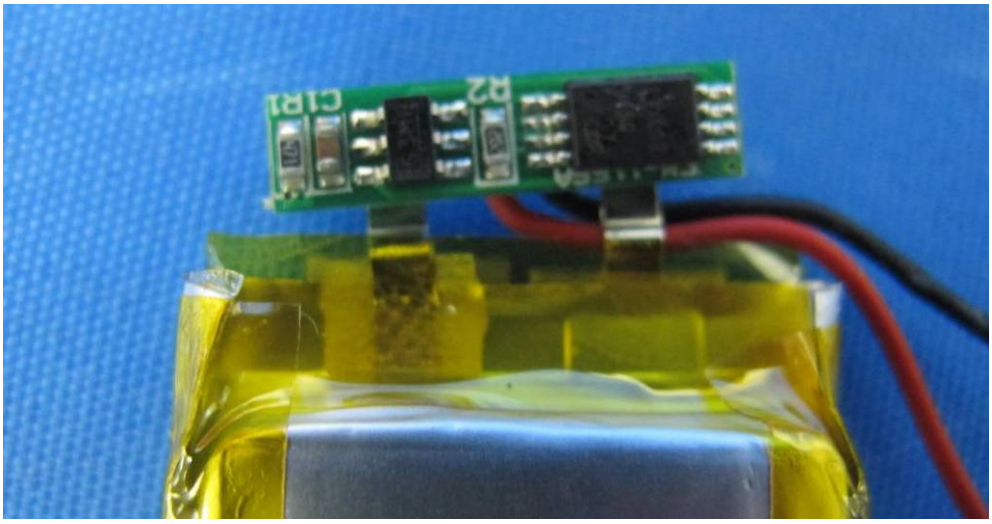
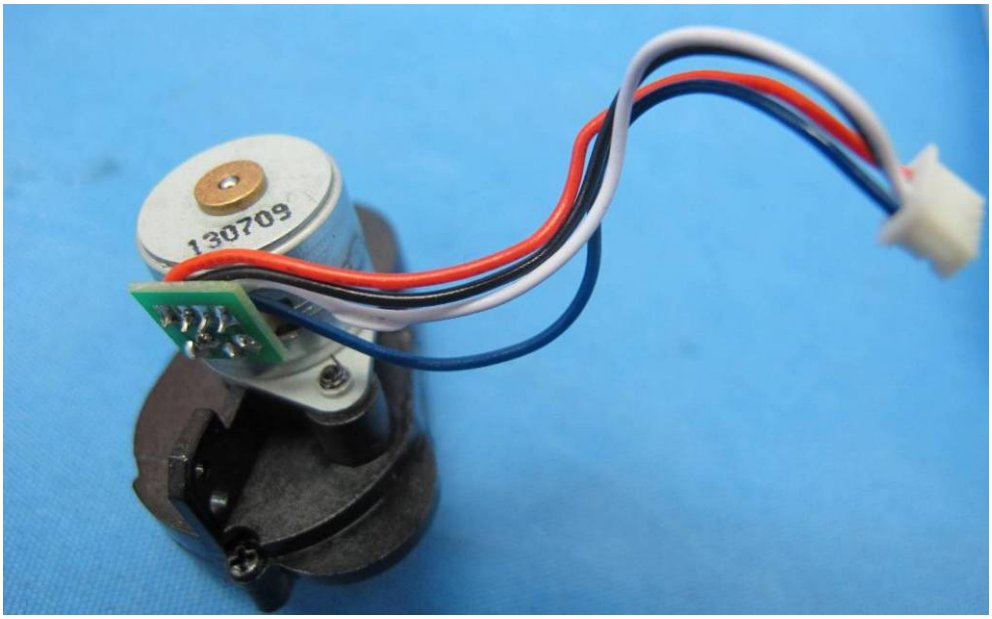


View of Battery Protection PCB



Overall View of DC Motor

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